

No. 3.— *Reports on the Scientific Results of an Expedition to
Rain Forest Regions in Eastern Africa*

III

Mammals

BY GLOVER M. ALLEN AND BARBARA LAWRENCE

WITH FIELD NOTES BY ARTHUR LOVERIDGE

CONTENTS

	Page
Introduction	31
List of species collected	34
Systematic discussion	39
Bibliography	126

INTRODUCTION

The collection dealt with in this report, was made by Mr. Arthur Loveridge while investigating distributional problems associated with rain forest areas in Uganda and Kenya. The enquiry was carried out on behalf of the Museum of Comparative Zoölogy with a fellowship granted by the John Simon Guggenheim Memorial Foundation of New York.

The authors have collaborated in the identification and taxonomic work recorded under the headings of Distribution, Discussion and Coloration. The field notes contributed by the collector, are listed in the first person singular under Measurements, Breeding, Diet, Enemies, Habits, Folklore, Native names, etc.

Altitudes, and other information regarding the localities in which collecting was carried on, will be found in the final paper of this series of reports, which will treat of the whole vertebrate terrestrial fauna of Mounts Debasien and Elgon in relation to that of the Usambara Mountains in Tanganyika Territory.

The period of collecting mammals was from November 9, 1933, to June 30, 1934, during which time 1,024 skins and skulls representing 133 species or races of mammals were secured. Of these 64 forms were new to the collections of the Museum of Comparative Zoölogy. A special feature of the collection was the topotypes, frequently in

series, of 36 species apart from many others which were almost topotypic. It has been found necessary to describe only one bat and a pouched rat as new, namely

Nycteris nana tristis subsp. nov. ♀ from Kaimosi, Kenya Colony.

Saccostomus cricetulus sp. nov. ♂ ♀ from Greeki River, Uganda.

Attention, however, may be directed to such rarities as *Petrodomus s. sangi*, *Nycteris aurita*, *Rhinolophus f. exsul*, *Perodicticus p. ibeanus*, *Cercopithecus neglectus*, *Cercocebus g. galeritus*, *Colobus b. rufomitratu*s, *Zelotomys h. vinaceus*, *Atherurus turneri*, *Dendrohyrax a. bettoni* and many others of which good series were obtained.

When measurements are given serially they are always in the following order: — (1) length from snout to anus; (2) length of the tail without terminal hairs; (3) length of hind foot without claws; (4) length of ear from tip to notch. In the case of bats a fifth measurement is added: (5) length of wing from axilla to tip. All dimensions are in millimetres, and it is those of the *largest* male and *largest* female of the series which are supplied.

We take this opportunity of expressing our thanks to Mr. Gerritt S. Miller Jr., and Dr. Remington Kellogg for loaning material from the National Collection, and Mr. J. K. Doult of the Carnegie Museum; Mons. L. Chopard for identifying the hemimerid parasites and our colleagues, Drs. Joseph Bequaert and J. H. Sandground of the Harvard School of Tropical Medicine for their kindness in identifying the many parasites enumerated in the following pages. All the photographs, where not otherwise stated, were taken by Mrs. Loveridge.

Special interest attaches to those species of mammals characteristic of heavy forest growth in which this collection is particularly rich. Their presence at various localities here marks the eastward or north-eastward limit of their range and is correlated with relict patches of forest, often isolated on mountains or in river valleys. No doubt these areas were formerly more extensive and supported a fauna whose species ranged more or less continuously across the continent though frequently breaking up into local races. Increasing aridity and the effect of human occupation, clearing and burning, has resulted in driving back the eastward outposts of the rain forest with a corresponding restriction in the numbers and ranges of these species.

The following are rather characteristic of this fauna: — *Sylvisorex gemmeus* and *S. mundus*, long-tailed shrews; *Rousettus angolensis*, a

rousette bat here at about its eastern limit; *Nycteris nana tristis*, the dwarf hollow-faced bat, and probably one or two others of the genus although some are more characteristic of slightly drier country; *Perodicticus potto ibeanus*, the eastern potto, for which Kaimosi seems to be about the most eastern station; *Cercocebus g. galeritus*, the crested mangabey, of which an outpost colony on the lower reaches of the Tana River is the sole representative of this genus in Kenya; *Cercopithecus nictitans schmidtii*, an eastern representative of the white-nosed monkey, most of the other races of which are West African; *Cercopithecus mitis kibonotensis* and *C. m. stuhlmanni*, well-marked races of the blue monkey, the former found in the coastal forests, the latter in those of the Elgon region and adjacent areas westward; *Colobus polykomos matschiei* of the Elgon region, a close relative of the race of the central Kenya forests; *C. badius rufomitatus*, the red-capped colobus, of special interest since this type is apparently not found in Kenya except for this outpost in the region of the lower Tana River, whilst its nearest ally is probably the race *gordonorum*, a rare animal of south central Tanganyika; *Genetta servalina bettoni*, a close-spotted genet found in the Elgon and Kaimosi forests which is clearly an eastern representative of *G. servalina* of West Africa; *Nandinia binotata arborea*, the tree civet, a very slightly marked form of the type common in the western forests; *Anomalurus jacksoni*, a gray species of scaly-tailed flying squirrel, confined to the heavy forests of Uganda eastward to Kaimosi in Kenya Colony; *Heliosciurus rubrobrachium nyansae*, an outpost subspecies of a squirrel common in West African forests and meeting the range of *H. multicolor elegans* an eastern tree squirrel, on Mount Elgon; *H. undulatus shindi*, a related species of which this race is restricted to forested mountain tops in the Taita Hills near the coast; *Protoxerus stangeri bea*, the Kenya giant squirrel, again an eastern race of a forest squirrel common in parts of West Africa but only found in Kenya in the Kakamega forests near Kaimosi; *Claviglis saturatus*, a forest-living dormouse; *Dendromus ruddi*, recalling the unstriped *D. messorius* of the Cameroons; *Oenomys bacchante editus*, the rufous-nosed mouse, evidently allied to West African races of *O. hypoxanthus* and represented on Mount Kenya by a similar subspecies. *Lophuromys sikapusi ansorgei*, the pink-bellied mouse, is apparently here near the eastern limits of its range and giving place to the eastern species *L. a. aquilus*; *Atherurus turneri*, the brush-tailed porcupine, allied to *A. africanus*, perhaps its eastern representative, reaches at Kaimosi, the north-eastern limit of the group's range in Africa; *Hylochoerus meinertzi*

hageni, the forest pig, found in other forested areas of Kenya Colony as well.

To this list doubtless others will be added such as *Colomys*, lately discovered at Elburgon, Kenya, but several genera such as *Stochomys*, *Malacomys*, *Deomys* still only known from West Africa, appear to be absent as are the galagos, *Galago elegantulus* and *G. demidorii*. No doubt these are confined to the western portions of the continent. Additional interest is furnished by those areas in Kenya Colony where the western forest fauna meets with that of the steppe and thornbush districts of the east.

LIST OF SPECIES COLLECTED*

ERINACEIDAE	Page
<i>Atelerix pruneri hindei</i> (Thomas)	39
MACROSCOLIDIDAE	
<i>Petrodromus (Cercotenus) sultan sangi</i> Heller	39
<i>Nasilio brachyrhynchus delamerei</i> (Thomas)	40
<i>Elephantulus rufescens rufescens</i> (Peters)	40
SORICIDAE	
<i>Sylvisorex gemmeus</i> Heller	41
<i>Sylvisorex mundus</i> Osgood	41
<i>Crocidura nyansae nyansae</i> Neumann	41
<i>Crocidura hindei</i> Thomas	42
<i>Crocidura turba zaodon</i> Osgood	42
<i>Crocidura jacksoni jacksoni</i> Thomas	43
<i>Crocidura hildegardae hildegardae</i> Thomas	43
<i>Crocidura bicolor elgonius</i> Osgood	44
PTEROPIDAE	
<i>Rousettus (Lissonycteris) angolensis</i> (Bocage)	44
<i>Rousettus leachi</i> (Smith)	45
<i>Rousettus lanosus kempfi</i> Thomas	45
<i>Epomophorus wahlbergi wahlbergi</i> (Sundevall)	45
<i>Epomophorus labiatus minor</i> Dobson	46
EMBALLONURIDAE	
<i>Taphozous perforatus haedinus</i> Thomas	46

*Species in parenthesis were not collected but are discussed.

NYCTERIDAE	Page
<i>Nycteris nana tristis</i> subsp. nov.	47
<i>Nycteris hispida</i> (Schreber)	48
<i>Nycteris aurita</i> (Andersen)	48
<i>Nycteris damarensis brockmani</i> (Andersen)	49
<i>Nycteris thebaica revoili</i> Robin	49
MEGADERMIDAE	
<i>Lavia frons rex</i> Miller	50
<i>Cardioderma cor</i> (Peters)	50
RHINOLOPHIDAE	
<i>Rhinolophus hildebrandtii</i> Peters	51
<i>Rhinolophus eloquens</i> Andersen	51
<i>Rhinolophus fumigatus exsul</i> Andersen	52
HIPPOSIDERIDAE	
<i>Hipposideros caffer</i> (Sundevall)	52
<i>Hipposideros ruber</i> (Noack)	53
VESPERTILIONIDAE	
<i>Pipistrellus nanus</i> (Peters)	53
<i>Glauconycteris argentata</i> (Dobson)	53
MOLOSSIDAE	
<i>Mops (Allomops) osborni</i> Allen	54
<i>Chaerephon hindci</i> (Thomas)	55
CANIDAE	
<i>Thos mesomelas mcmillani</i> Heller	55
(<i>Lycan pictus lupinus</i> Thomas)	55
MUSTELIDAE	
<i>Mellivora capensis sagulata</i> Hollister	57
<i>Aonyx capensis hindei</i> (Thomas)	58
VIVERRIDAE	
<i>Civettictis civetta schwarzi</i> Cabrera	58
<i>Genetta servalina bettoni</i> Thomas	60
<i>Genetta stuhlmanni stuhlmanni</i> Matschie	60
<i>Genetta stuhlmanni erlangeri</i> Matschie	61
<i>Nandinia binotata arborea</i> Heller	62
<i>Galerella sanguinea ibeae</i> (Wroughton)	62
<i>Herpestes ichneumon funestus</i> (Osgood)	63

	Page
<i>Atilax paludinosus robustus</i> (Gray)	63
<i>Ichneumia albicauda ibeana</i> (Thomas)	64
<i>Helogale undulata rufula</i> Thomas	65
<i>Mungos mungo colonus</i> (Heller)	65
FELIDAE	
<i>Felis</i> (<i>Leptailurus</i>) <i>capensis hindei</i> Wroughton	65
<i>Felis ocreata nandae</i> Heller	66
LORISIDAE	
<i>Perodicticus potto ibeanus</i> Thomas	67
GALAGIDAE	
<i>Galago crassicaudatus lasiotis</i> Peters	68
<i>Galago senegalensis albipes</i> Dollman	69
<i>Galago senegalensis braccatus</i> Elliot	69
CERCOPITHECIDAE	
<i>Cercopithecus nictitans schmidti</i> Matschie	69
<i>Cercopithecus aethiops johnstoni</i> Pocock	71
<i>Cercopithecus aethiops callidus</i> (Hollister)	71
<i>Cercopithecus mitis kibonotensis</i> Lönnberg	72
<i>Cercopithecus mitis stuhlmanni</i> Matschie	73
<i>Cercopithecus neglectus</i> Schlegel	74
<i>Cercocebus galeritus galeritus</i> Peters	75
<i>Papio furax</i> Elliot	75
<i>Papio ibeanus</i> Thomas	78
PITHECIDAE	
<i>Colobus polykomos matschiei</i> Neumann	78
<i>Colobus badius rufomitratus</i> Peters	79
ANOMALURIDAE	
<i>Anomalurus jacksoni</i> de Winton	80
SCIURIDAE	
<i>Heliosciurus rufobrachium nyansae</i> (Neumann)	81
<i>Heliosciurus undulatus shindi</i> Heller	82
<i>Heliosciurus multicolor elegans</i> Thomas	82
<i>Protoxerus stangeri bea</i> Heller	83
MYOXIDAE	
<i>Claviglis parvus parvus</i> (True)	83
<i>Claviglis saturatus</i> (Dollman)	84

CRICETIDAE	Page
<i>Dipodillus pusillus</i> (Peters)	86
<i>Tatera vicina vicina</i> (Peters)	87
<i>Tatera nigricauda nigricauda</i> (Peters)	87
<i>Tatera nigrita</i> Wroughton	87
 RHIZOMYIDAE	
<i>Tachyoryctes ruddi</i> Thomas	88
 MURIDAE	
<i>Dendromus insignis insignis</i> Thomas	89
<i>Dendromus whytei pallescens</i> Osgood	89
<i>Dendromus ruddi</i> Wroughton	89
<i>Dendromus aeracus</i> Wroughton	90
<i>Zelotomys hildegardeae vinaceus</i> Heller	90
<i>Thamnomys surdaster polionops</i> Osgood	91
<i>Thamnomys surdaster elgonis</i> Thomas	91
<i>Oenomys bacchante editus</i> Thomas & Wroughton	92
<i>Rattus rattus kijabius</i> (Allen)	93
<i>Aethomys kaiseri medicatus</i> (Wroughton)	94
<i>Praomys tullbergi jacksoni</i> (de Winton)	94
<i>Praomys taitae</i> (Heller)	95
<i>Mastomys coucha tinctus</i> (Hollister)	95
<i>Mastomys coucha hildebrandtii</i> (Peters)	96
<i>Leggada triton triton</i> Thomas	96
<i>Leggada bella bella</i> Thomas	97
<i>Leggada bella vicina</i> Thomas	97
<i>Leggada grata grata</i> Thomas	97
<i>Cricetomys gambianus elgonis</i> Thomas	98
<i>Lophuromys aquilus aquilus</i> (True)	99
<i>Lophuromys sikapusi ansorgei</i> de Winton	100
<i>Saccostomus cricetulus</i> sp. nov.	100
<i>Acomys ignitus ignitus</i> Dollman	102
<i>Acomys wilsoni wilsoni</i> Thomas	103
<i>Dasymys helukus helukus</i> Heller	103
<i>Pelomys fallax iridescent</i> Heller	104
<i>Arvicanthi abyssinicus nubilans</i> Wroughton	104
<i>Arvicanthi abyssinicus virescent</i> Heller	104
<i>Lemniscomys griselda maculosus</i> (Osgood)	105
<i>Lemniscomys striatus massaicus</i> (Pagenstecher)	105
<i>Rhabdomys punilio diminutus</i> (Thomas)	105
<i>Otomys tropicalis elgonis</i> Wroughton	106
<i>Otomys angoniensis classodon</i> Osgood	106

HYSTRICIDAE	Page
<i>Hystrix galeata</i> Thomas	107
<i>Atherurus turneri</i> St. Leger	107
THRYONOMYIDAE	
<i>Choeromys gregorianus</i> (Thomas)	108
LEPORIDAE	
<i>Lepus vietoriae kakumegae</i> Heller	109
SUIDAE	
(<i>Hylochoerus meinertzhageni meinertzhageni</i> Thomas)	109
BOVIDAE	
<i>Damaliscus korrigum topi</i> Blaine	110
<i>Cephalophus monticola museuloides</i> Heller	110
<i>Sylvicapra grimmia deserti</i> Heller	111
<i>Sylvicapra grimmia lobeliarum</i> Lönnberg	112
<i>Sylvicapra grimmia nyanzae</i> Neumann	112
<i>Ourebia montana cottoni</i> Thomas & Wroughton	113
<i>Raphieeros campestris neumanni</i> (Matschie)	113
<i>Rhynchotragus kirkii kirkii</i> (Günther)	113
<i>Rhynchotragus kirkii nyikae</i> Heller	114
<i>Kobus ellipsiprymnus kuru</i> Heller	115
<i>Kobus defassa ugandae</i> Neumann	115
<i>Tragelaphus scriptus delamerei</i> Pocock	116
<i>Tragelaphus scriptus massaicus</i> Neumann	117
<i>Tragelaphus scriptus olivaceus</i> Heller	117
ELEPHANTIDAE	
(<i>Loxodonta africana peeli</i> (Lydekker))	118
PROCAVIIDAE	
<i>Proeavia habessinica daemon</i> Thomas	119
<i>Heterohyrax syriacus kempii</i> (Thomas)	120
<i>Heterohyrax syriacus hindei</i> (Wroughton)	121
<i>Dendrohyrax arboreus stuhlmanni</i> (Matschie)	123
<i>Dendrohyrax arboreus bettoni</i> (Thomas & Wroughton)	123
DELPHINIDAE	
<i>Prodelphinus attenuatus</i> (Gray)	124
DUGONGIDAE	
(<i>Dugong dugon</i> (P. S. L. Müller))	125

Systematic Discussion

ERINACEIDAE

ATELERIX PRUNERI HINDEI (Thomas)

Erinaceus hindei Thomas, 1910, Ann. Mag. Nat. Hist. (8), 5, p. 193: Kitui, Kenya Colony.

2 ♂ 2 ♀ (M. C. Z. 31796-9) Voi, K. C. 18.iv.34.

Native name. *Kisesege*di (Kitaita).

Discussion. In 1922, J. A. Allen discussed at length the status of the names *albiventris* and *pruneri*, reaching the conclusion that the former was unidentifiable, and that the latter, synchronously published, should replace it for the typical race from Senaar. This decision rests largely on the fact that no locality can be assigned to the type of *albiventris*, "although the type appears to have been preserved in the Munich Museum." Through the courtesy of the Director of the latter institution, Dr. Lorenz Müller, this specimen has been loaned for examination and proves to be the Senegalese species, which is distinct from *A. pruneri*.

Coloration. This series illustrates what is probably the effect of age, in that the younger two have the spine tips clear white, contrasting with the blackish bases, with a short buffy or pale-ochraceous area forming a transitional band between. In the older specimens many of the whitish tips become discolored buffy, and the black bases of a less intense browner shade. What seem to be new spines with fresh white tips are apparently coming in here and there.

Measurements. ♂. 180. 21. 24. 27 mm., ♀. 165. 18. 22. 24 mm.

Parasites. The largest male was infested with a score or more of large ticks (*Rhipicephalus armatus*). These were not confined to the spinous regions but occurred on the belly where it might have been supposed that an insectivorous animal like a hedgehog would have attacked them.

MACROSCELIDIDAE

PETRODROMUS (CERCOCTENUS) SULTAN SANGI Heller

Petrodromus sultani sangi Heller, 1912, Smithsonian Misc. Coll., 60, No. 12, p. 12: Mount Mbololo, Kenya Colony.

♀ (M. C. Z. 31795) Mt. Mbololo, K. C. 25. iv. 34.

Native name. *Mwonunguomballa* (Kitaita).

Discussion. The specimen is a topotype and apparently the second to be recorded. In color it agrees closely with the typical form, *sultan*, but Hollister, however, believed the race separable on the basis of a narrower rostrum and smaller upper premolars. The latter character is borne out in comparison with a specimen representing typical *sultan*, from Amani, Tanganyika Territory.

Measurements. ♀. 205. 184. 56. 36 mm.

NASILIO BRACHYRHYNCHUS DELAMEREI (Thomas)

Macroscelides delamerei Thomas, 1901, Ann. Mag. Nat. Hist. (7), 8, p. 155: Athi River, Kenya Colony.

♀ (M. C. Z. 31807) Voi, K. C. 7. iv. 34.

Native name. *Mwonungu* (Kitaita).

Discussion. This specimen is immature, having the complete milk dentition only, so that the diagnostic third lower molar of the permanent set is not yet present.

Coloration. The narrow eye ring, interrupted at the front, and not extended behind as a broad white mark to the base of the ear, as well as the richer chestnut of the back seem to confirm its reference to this genus rather than to *Elephantulus*, which was secured at the same locality. It is peculiar in having the backs of the hind feet buffy, instead of clear whitish as in specimens from farther inland.

Measurements. ♀. 97. 80. 27 mm. Ear eaten by ants while the animal was lying dead in a snap-back rat trap.

ELEPHANTULUS RUFESCENS RUFESCENS (Peters)

Macroscelides rufescens Peters, 1878, Monatsb. Akad. Wiss. Berlin, p. 198: Ndi, Taita, Kenya Colony.

1 ♂ 2 ♀ (M. C. Z. 31803-5) Voi, K. C. 9-10. iv. 34.

4 ♀ (M. C. Z. 31800-2, 31806) Mt. Mbololo, K. C. 24. iv. 34.

Distribution. The series from Mount Mbololo, Taita Hills, are practically topotypes.

Native name. *Mwonungu* (Kitaita).

Measurements. ♂. 115. 166. 29. 19 mm., ♀. 138. 125. 31. 20 mm.

SORICIDAE

SYLVISOREX GEMMEUS Heller

Sylvisorex gemmeus Heller, 1910, Smithsonian Misc. Coll., **56**, No. 15, p. 7:
Rhino Camp, Lado Enclave.

1 (M. C. Z. 31242) Kirui, K. C. 6. ii. 34.

3 ♂ 1 ♀ (M. C. Z. 31239-40, 31257, 31259) Kaimosi, K. C. 16-20.
ii. 34.

Native names. *Lunihi* (Luragoli); *luhui* (Lutereki) for all shrews.

Coloration. These five specimens are uniformly dark chocolate brown above, with white-tipped underparts. This color and the long tail, exceeding the head and body, distinguish it readily. Hollister (1918, p. 39) has recorded a large series from Kaimosi and adds a table of measurements.

Measurements. ♂. 75. 87. 14. 7 mm., ♀. 65. 75. 14. 7 mm.

SYLVISOREX MUNDUS Osgood

Sylvisorex mundus Osgood, 1910, Publ. Field Mus. Nat. Hist., Zoöl. Series,
10, p. 18: Kijabe, Kenya Colony.

♂ ♀ (M. C. Z. 31243-4) Butandiga, U. 14. i. 34.

Distribution. In addition to the original locality (Kijabe), specimens are recorded by Hollister (1918, p. 39) from the west side of Mount Kenya at altitudes of from 7,000 to 10,000 feet. This pair from the western slopes of Mount Elgon (7,000 feet) apparently constitute the first record north and west of Mount Kenya.

Native name. *Namageba* (Lugishu).

Discussion. Osgood in his original description indicates its close relationship with *S. granti* of Mount Ruwenzori, in which, however, the tail is relatively longer. In *S. mundus* it is apparently shorter than head and body. The uniformly blackish-brown coloration above and below further distinguishes it at once from the pale-bellied *S. gemmeus*.

Measurements. ♂. 64. 57. 12. 7 mm., ♀. 64. 58. 12. 7 mm.

CROCIDURA NYANSAE NYANSAE Neumann

Crocidura flavescens nyanseae Neumann, 1900, Zoöl. Jahrb. Syst., **13**, p. 544:
Fort Lubwa, Usoga, Uganda.

♀ (M. C. Z. 31266) Sipi, U. 19. xii. 33.

2 ♀ (M. C. Z. 31263-4) Kaimosi, K. C. 20. ii & 9. iii. 34.

Distribution. Hollister (1918, p. 42) has previously recorded this large brown shrew from Kaimosi.

Coloration. One of the specimens from Sipi is just beginning to acquire the new pelage, which appears on the forehead in a patch extending from the nose to between the ears, and again as an oval area in the centre of the back behind the shoulders. The new fur is much darker, more nearly seal brown than the rest, which has faded to a dull brown.

Measurements. ♀. 160. 175. 35. 20 mm.

Parasites. Fleas were removed from the fur of a Kaimosi shrew.

Enemies. One was recovered, and preserved in alcohol, from the stomach of a Nose-horned Viper (*Bitis nasicornis*) at Kaimosi.

CROCIDURA HINDEI Thomas

Crocidura hindei Thomas, 1904, Ann. Mag. Nat. Hist. (7), 14, p. 237: Machakos, Kenya Colony.

♀ (M. C. Z. 31785) Ngatana, K. C. 18. vi. 34.

Native name. *Tungu* (Kipokomo).

Diseussion. This shrew is in a short gray pelage, apparently immature. The shorter tail as compared with *C. suahelae* and the flattened skull with a total length of about 24 mm. distinguish it.

Measurements. ♀. 90. 44. 13. 6 mm.

Habitat. I captured this gray shrew beneath a rubbish heap in one of the native gardens.

CROCIDURA TURBA ZAODON Osgood

Crocidura turba zaodon Osgood, 1910, Publ. Field Mus. Nat. Hist., Zoöl. Series, 10, No. 3, p. 21: Nairobi, Kenya Colony.

♀ (M. C. Z. 31268) Greeki River, U. 6. xii. 33.

3 ♀ (M. C. Z. 31254-6) Sipi, U. 20-22. xii. 33.

2 ♂ 4 ♀ (M. C. Z. 31245-50) Butandiga, U. 8-14. i. 34.

2 ♂ 2 ♀ (M. C. Z. 31251-3, 31265) Kaimosi, K. C. 9-26. ii. 34.

Distribution. This seems to be the common shrew in northern Kenya Colony. The series of thirteen skins is largely from Mount Elgon, and so represents *Crocidura turba kempi* Dollman (type locality, Kirui, Mount Elgon), but this, as Hollister (1918, p. 55) first suggested, is clearly the same as *C. t. zaodon* of the Nairobi region.

Native names. *Etutwi* (Karamojong); *guchuru* (Kisabei); *namageba* (Lugishu); *lunihi* (Luragoli); *luhui* (Lutereki).

Coloration. In color the Greeki River specimen is in a pale reddish-brown pelage, with pale belly, while all of the others are of the usual dark blackish-brown, indicating the occasional occurrence in this as in some other species of the genus, of a reddish color phase.

Measurements. ♂. 87. 60. 14. 7 mm., ♀. 97. 51. 13. 9 mm.

Enemies. Examples of this shrew were removed from the stomachs of Brown House Snakes (*Boaedon lineatus*) at Sipi and Butandiga. Of these the Sipi Shrew was made into a skin.

CROCIDURA JACKSONI JACKSONI Thomas

Crocidura jacksoni Thomas, 1904, Ann. Mag. Nat. Hist. (7), **14**, p. 238:
Ravine Station, Kenya Colony.

♂ (M. C. Z. 31784) Voi, K. C. 12. iv. 34.

3 ♂ 3 ♀ (M. C. Z. 31282-3, 31286-9) Peccatoni, K. C. 25. v. 34.

1 (M. C. Z. 31790) Golbanti, K. C. 23. vi. 34.

Native names. *Nyonge* (Kisagalla); *tungu* (Kipokomo).

Coloration. A fairly uniform series, of a dull chestnut brown and gray, with faintly bicolor tail and pale whitish to grayish underside.

Measurements. ♂. 95. 56. 14. 8 mm., ♀. 85. 60. 12. 12 mm.

Habitat. I dug the Voi specimen out of a mass of flood debris in the dry bed of the Voi River.

CROCIDURA HILDEGARDEAE HILDEGARDEAE Thomas

Crocidura hildegardeae Thomas, 1904, Ann. Mag. Nat. Hist. (7), **14**, p. 240:
Fort Hall, Kenya Colony.

♀ (M. C. Z. 31267) Sipi, U. 22. xii. 33.

♂ ♀ (M. C. Z. 31241, 31258) Kaimosi, K. C. 8 & 15. ii. 34.

♀ ♀ (M. C. Z. 31793-4) Mt. Mbololo, K. C. 23. iv. 34.

♂ (M. C. Z. 31792) Peccatoni, K. C. 25. v. 34.

♂ (M. C. Z. 31791) Wema, K. C. 19. vi. 34.

Distribution. Apparently Heller did not secure this species at Kaimosi so that the pair from that locality and the female from Sipi, Mount Elgon, furnish interesting records north of those given by Hollister (1918, p. 64).

Native names. *Namageba* (Lugishu); *lunihi* (Luragoli); *luhui* (Lutereki); *munyongi* (Kitaita); *tungu* (Kipokomo).

Discussion. The skull length — about 18.5 to 19. mm. — is slightly but constantly less than in *C. jacksoni*. The two females from Mount Mbololo have slightly wider brain cases than the two males from Peccatoni and Wema.

Measurements. ♂. (Wema) 87. 45. 12. 11 mm., ♀. (Kaimosi) 75. 46. 12. 7 mm. The Mbololo females had identical measurements, presumably being subadults from the same nest, ♀ ♀ . 67. 47. 12. 7 mm.

Habitat. I dug the Wema shrew from the galleries of a semi- abandoned termitarium.

CROCIDURA BICOLOR ELGONIUS Osgood

Crocidura bicolor elgonius Osgood, 1910, Ann. Mag. Nat. Hist. (8), 5, p. 369: Kirui, Mount Elgon, Kenya Colony.

♀ (M. C. Z. 31262) Butandiga, U. 14. i. 34.

1 (M. C. Z. 31261) Kirui, K. C. 6. ii. 34.

♀ (M. C. Z. 31260) Kaimosi, K. C. 7. iii. 34.

Native names. *Namageba* (Lugishu); *lunihi* (Luragoli); *luhui* (Lutereki).

Coloration. The small shrews of this species are notable for their very short pelage. The Butandiga female is darker than the two others, which have a faintly brownish or chocolate tint instead of being dark seal brown.

Measurements. ♀. (Kaimosi) 58. 43. 8. 7 mm.

PTEROPIDAE

ROUSETTUS (LISSONYCTERIS) ANGOLENSIS (Bocage)

Cynonycteris angolensis Bocage, 1898, Jorn. Sci. Math. Acad. Sci. Lisboa (2), 5, p. 133: Pungo Andongo, Cahata, Quibula, Angola.

♀ (M. C. Z. 31149) Sipi, U. 21. xii. 33.

♀ (M. C. Z. 31147) Butandiga, U. 10. i. 34.

Distribution. This bat has been recorded over the area from Angola to the Ruwenzori region and Tanganyika Territory, so that the above records from Mount Elgon extend its known range slightly to the northeast.

Native names. *Bebea* (Kisabei); *ebugut* (Lugishu).

Discussion. The Sipi specimen has a supernumerary lower molar lying to the inner side of the alveolar line, between the usual two molars.

Measurements. ♀ juv. (Butandiga) 112. 0. 18. 19. 230 mm.

ROUSETTUS LEACHI (Smith)

Pteropus leachi A. Smith, 1829, Zoöl. Journ., 4, p. 433: Cape of Good Hope.

3 ♂ 3 ♀ (M. C. Z. 31125, 31128-32) Sipi, U. 18. xii. 33.

Distribution. This is the most northerly point from which typical *leachi* has been reported.

Native names. *Bebea* (Kisabei); *ebugut* (Lugishu).

Discussion. These six specimens are on the whole nearer typical *leachi* than *aegyptiacus*, and agree with the careful description of Andersen in having the palatal ridges 4, 3, 1, instead of 4, 4, 1, all three of those in which the ridges are preserved having three divided ridges behind the molars; the teeth are smaller; and the interorbital constriction equals the postorbital width instead of exceeding it.

Measurements. ♂. 150. 17. 18. 22. 300 mm., ♀. 130. 22. 20. 22. 230 mm.

ROUSETTUS LANOSUS KEMPI Thomas

Rousettus kempi Thomas, 1909, Ann. Mag. Nat. Hist. (8), 4, p. 543: Kirui, Mount Elgon, Kenya Colony.

4 ♂ 1 ♀ (M. C. Z. 31123-4, 31126-7, 31148) Sipi, U. 21. xii. 33.

Native names. *Bebea* (Kisabei); *ebugut* (Lugishu).

Corrigenda. The series of fruit bats from Bagilo, Uluguru Mountains, Tanganyika Territory, previously referred to *leachi* (Allen and Loveridge, 1927, p. 420) are in reality *kempi*, their teeth being only minutely smaller than those of the Sipi series which are practically topotypes of *kempi* coming from the western (Uganda) side of the mountain instead of the southeastern (Kenya) slopes. There seems to be no doubt that the Elgon animal is only a very slightly differentiated race.

Measurements. ♂. 155. 25. 17. 23. 292 mm., ♀. 130. 22. 22. 20. 273 mm.

Parasites. Numerous streblids were collected from the fur of these fruit bats.

Habitat. These bats, as also the Sipi examples of the last two members of the genus, were all collected in the great cave below the magnificent Sipi Falls.

EPOMOPHORUS WAHLBERGI WAHLBERGI (Sundevall)

Pteropus wahlbergi Sundevall, 1846, Öfvers. Kongl. Vet.-Akad. Förh., Stockholm, 3, p. 118: Port Natal, i.e. Durban, Natal.

♂ (M. C. Z. 31122) Sipi, U. 23. xii. 33.

♀ (M. C. Z. 31843) Lamu, Lamu Id., K. C. 7. v. 34.

Distribution. According to Andersen's account, these specimens come from the range covered by the typical race.

Native names. *Ebugut* (Lugishu).

Discussion. Both specimens are young, yet well grown with the epiphyses of the finger joints nearly ankylosed with their respective diaphyses, so that their appearance of small size is deceptive. The skulls prove their youth, having shorter rostra and fuller brain cases than in later stages. The palatal ridges also show a slightly different condition in that the last one is proportionally farther forward than in mature animals, being slightly anterior to the middle of the post-dental palate.

Measurements. ♂. 100. 0. 17. 18. 190 mm., ♀. 91. 0. 15. 18. 200 mm.

EPOMOPHORUS LABIATUS MINOR Dobson

Epomophorus minor Dobson, 1880, Proc. Zool. Soc. London, p. 715: Zanzibar (*fide* Andersen).

♀ (M. C. Z. 31146) Kaimosi, K. C. 25. ii. 34.

Distribution. The type locality of *E. labiatus* is "Abyssinia," so that this specimen from Kaimosi is from a locality nearly midway between the typical areas of that animal and *E. minor*.

Native name. *Linyinya* (Luragoli and Lutereki).

Discussion. Our example seems to be about intermediate in tooth dimensions between *labiatus* and *minor* as shown in Andersen's table but minutely nearer the limits assigned to *minor*, to which it is therefore referred. Since the two forms only differ in size, the occurrence of an intermediate specimen seems to warrant relegating *minor* to subspecific rank.

Measurements. ♀. 116. 0. 17. 18. 222 mm.

Breeding. On February 25, 1934, this female held a large fetus which was preserved.

EMBALLONURIDAE

TAPHOZOUS PERFORATUS HAEDINUS Thomas

Taphozous perforatus haedinus Thomas, 1915, Journ. Bombay Nat. Hist. Soc., 24, p. 62: Chanler Falls, Guaso Nyiro, Kenya Colony.

Taphozous perforatus Hollister, 1918, U. S. Nat. Mus. Bull. 99, p. 73.

5 ♂ 6 ♀ (M. C. Z. 31847, 31849-54, 31874-6, 31878) Lamu Id., K. C. 7. v. 34.

Measurements. ♂. 75. 26. 11. 19. 181 mm., ♀. 80. 26. 12. 18. 187 mm.

Breeding. The female whose measurements are given above was carrying a young male measuring 61. 16. 12. 14. 113 mm.

Habitat. Great numbers of these tomb bats were living in some old buildings along the sea front. The windows had long been boarded up and the places used as warehouses.

NYCTERIDAE

NYCTERIS NANA TRISTIS subsp. nov.

Type. Museum of Comparative Zoölogy, No. 31,156. An adult female, skin and skull, from Kaimosi, Kakamega district, Kenya Colony, collected by Arthur Loveridge, February 13, 1934.

Description. Compared with skins from Lolodorf, Cameroon, representing typical *N. nana* (type locality, Benito River, French Congo), the East African race lacks the warm russet coloration of the fur of both surfaces, and is instead a uniform dark drab gray both above and below. The fur is of the same color from tip to base except on the nape and especially about the bases of the ears, where it is slightly paler, a soiled grayish, basally. On the membranes the fur extends out on the propatagium from the axilla to about the end of the first third of the fore arm, and on the plagiopatagium to a line joining the elbow and the first third of the tibia. On the uropatagium the fur extends out as far as a line connecting the proximal ends of the tibiae. On the under side the extent is about the same, except that it does not quite reach the knees.

Measurements. The specimen has practically the same dimensions as those of the West African race. The type measures: fore arm, 35.8 mm.; tibia, 15.7; foot, 6.5; tail (about) 45; thumb, 11.5; third metacarpal, 28.5; first phalanx, 16.5; fourth metacarpal, 29.7; fifth metacarpal, 30.3 mm.

The skull measures: greatest length, 16.6 mm.; basal length, 12.5; palatal length, 3.6; zygomatic width, 9.3; mastoid width, 8.0; width across frontal plate, 6.6; width outside last molars, 6.2; upper cheek teeth, 5.3; lower cheek teeth, 5.8 mm.

Remarks. Through the kindness of Mr. J. Kenneth Doult, of the Carnegie Museum, we have had the loan of two specimens representing typical *Nycteris nana*, from Lolodorf, Cameroon. Both agree in their pronounced russet tint, contrasting with the dull gray hue of the

eastern animal. It is a rather rare species, for, in addition to the original specimen from Benito River, it has apparently been recorded but twice: by Hollister, in 1918, who mentions two in the United States National Museum from Yala River, Kenya Colony, as forming a considerable extension of the known range into eastern Africa, and again by Cabrera and Ruxton (1926, *Ann. Mag. Nat. Hist.* (9), **17**, p. 591), who had a specimen from Luluabourg, Belgian Congo, that flew into a room. The Cameroon specimens, referred to above, are now recorded for the first time.

NYCTERIS HISPIDA (Schreber)

Vespertilio hispida Schreber, 1774, *Säugthiere*, pl. lvi: Senegal.

2 ♂ 2 ♀ (M. C. Z. 31153-5, 31157) Kaimosi, K. C. 9. ii. & 9. iii. 34.

♀ (M. C. Z. 31842) Ngatana, K. C. 14. vi. 34.

Native names. *Linyinya* (Luragoli); *nundu* (Kipokomo); both general for small bats.

Discussion. Externally these differ from somewhat similar species in having the fur extend laterally on to the membrane from the first third of the forearm to the knee, and on the interfemoral membrane slightly beyond to a line about joining the middle of the tibiae, though more thinly. At the sides of the lateral membrane the fur becomes a golden brown.

Measurements. ♂. (Kaimosi) 50. 48. 7. 22. 140 mm., ♀. (Wema, Ngatana) 48. 50. 7. 20. 124 mm.

Habitat. Both this and the following species occur together for they were brought to my tent late at night by a native who had taken them in the village of Wema close to my camping ground.

NYCTERIS AURITA (Andersen)

Petalia aurita K. Andersen, 1912, *Ann. Mag. Nat. Hist.* (8), **10**, p. 547: Kilifi, Kenya Colony.

♀ (M. C. Z. 32059) Ngatana, K. C. 14. vi. 34.

Distribution. In addition to the type, described by Andersen from Kilifi, which is just a hundred miles south of Ngatana, we have found two other specimens of this bat recorded, namely those in the United States National Museum listed by Hollister (1918, p. 74), one taken many years ago on the Tana River, by Chanler, and recorded by True as *Nycteris hispida*, the other secured by Heller on the Marsabit

Road, northern Kenya Colony. Granvik (1924) it is true reports its occurrence in numbers in a cave on Mount Elgon, but it seems possible that this identification requires confirmation.

Measurements. ♀. 52. 55. 8. 27. 138 mm.

NYCTERIS DAMARENSIS BROCKMANI (Andersen)

Petalia damarensis brockmani K. Andersen, 1912, Ann. Mag. Nat. Hist. (8), 10, p. 548: Upper Sheikh, British Somaliland.

♀ (M. C. Z. 31141) Voi, K. C. 7. iv. 34.

Discussion. This single specimen seems to correspond in every particular to Andersen's description, its measurements being about the maximum of the extremes that he gives. In color the lower side is very pale, almost whitish.

Measurements. ♀. 62. 58. 12. 34. 150 mm.

NYCTERIS THEBAICA REVOILI Robin

Nycteris revoli Robin, 1881, Bull. Soc. Philom. Paris, (7), 5, p. 90: Northern Somaliland.

♀ ♀ (M. C. Z. 31158-9) Elgonyi, K. C. 24. i. & 4. ii. 34.

♀ (M. C. Z. 31160) Kirui, K. C. 29. i. 34.

Native name. *Kubukabuk* (Kitosh).

Discussion. The form *revoli* seems to replace typical *thebaica* in Somaliland and Kenya Colony, and as Dobson once suggested, may prove to be only racially distinct from *capensis* to the south. It seems best, therefore, to regard *revoli* as a subspecies of the Egyptian *thebaica*, which it resembles in size. A cotype of *revoli* which has been used for comparison, does not differ except possibly in minute points that fall within the limits of individual variation.

Measurements. ♀. (Kirui) 50. 52. 10. 33. 144 mm.

Breeding. The female from Kirui on January 29 held a fetus ready for birth (preserved in alcohol). One of the Elgonyi bats was carrying two young on February 4, 1934. The measurements of one of these sucklings were as follows: ♂. 36. 20. 9. 16. 63 mm.

Habitat. The Kirui bat was not taken in Kemp's cave but in a low cavern on the opposite slopes of the valley. When I entered there were five bats in the colony, four flew out immediately on being disturbed so I only succeeded in netting the pregnant female which flew from one corner to another.

MEGADERMIDAE

LAVIA FRONS REX Miller

Lavia rex Miller, 1905, Proc. Biol. Soc. Washington, **18**, p. 227: Taveta, Kenya Colony.

- ♂ ♀ (M. C. Z. 31134-5) s. bank Greeki River, U. 7. xii. 33.
 ♂ (M. C. Z. 31133) Kaimosi, K. C. 1. iii. 34.
 ♂ (M. C. Z. 31836) Kitau, Manda Id., K. C. 15. v. 34.
 ♂ (M. C. Z. 31839) Mkonumbi, K. C. 29. v. 34.
 ♀ (M. C. Z. 31837) Golbanti, K. C. 22. vi. 34.

Native name. *Lumenwa* (Karamojong).

Discussion. The status of the forms described as *rex* and *affinis* seems still not to be finally settled, but we have provisionally considered these specimens to represent the former.

Measurements. ♂. (Kaimosi) 70. 0. 16. 42. 190 mm., ♀. (Greeki River) 71. 0. 18. 45. 162 mm.

Enemies. The skin from Kitau was taken from a freshly swallowed bat recovered from the stomach of a Common Mamba (*Dendraspis angusticeps*).

Habitat. The pair from Greeki River were shot as they hung together in a thorn tree near the south bank. The species was also seen at Shella on Lamu Island. They were common in the acacia on Manda Island. The Mkonumbi bat was flitting from tree to tree calling with a bird-like note just after dark. After watching it for some time, I shone its eyes with an electric torch and shot it with a .22 cartridge loaded with dust shot.

CARDIODERMA COR (Peters)

Megaderma cor Peters, 1872, Monatsb. Akad. Wiss. Berlin, p. 194: Abyssinia.

- 4 ♂ 8 ♀ (M. C. Z. 31825-35, 31838) Lamu Id., K. C. 8. v. 34.

Distribution. This seems to be a rather uncommon species principally found in northeastern Africa.

Coloration. The uniformly blue-gray pelage is a shade darker in the immature specimen.

Measurements. ♂. 75. 0. 18. 35. 175 mm., ♀. 75. 0. 18. 39. 174 mm.

Parasites. Streblids were recovered from their fur.

Habitat. At least a hundred of these bats were found to be occupying a deserted house on one of Mr. C. E. Whitton's estates about half-an-hour's walk northwest of Lamu township. They hung from

the beams and found ready egress through the large gaps in the rotting thatch. All were shot with a .22 rifle whose rifling was removed to fire dust shot.

RHINOLOPHIDAE

RHINOLOPHUS HILDEBRANDTII Peters

Rhinolophus hildebrandtii Peters, 1878, Monatsb. Akad. Wiss. Berlin, p. 195: Ndi, Taita, Kenya Colony.

♀ (M. C. Z. 31840) Voi, K. C. 11. iv. 34.

Distribution. Voi is only about fifteen miles distant from the type locality.

Coloration. This specimen agrees in its pale buffy color with examples from Tanganyika Territory, in this respect differing noticeably from the series of the smaller, darker *R. eloquens*.

Measurements. ♀. 80. 45. 12. 33. 195 mm.

RHINOLOPHUS ELOQUENS Andersen

Rhinolophus hildebrandtii eloquens K. Andersen, 1905, Ann. Mag. Nat. Hist. (7), 15, p. 74: Entebbe, Uganda.

♂ (M. C. Z. 31173) Mt. Debasien, U. 13. xi. 33.

1 + 7 ♂ 2 ♀ (M. C. Z. 31161-70) Kirui, K. C. 23. i. 34.

♀ (M. C. Z. 31171) Elgonyi, K. C. 23. 1. 34.

Native names. *Lumenwa* (Karamojong); *kurukuru* (Kitosh).

Discussion. Hollister (1918, p. 84) has shown that this smaller species is well separated in dimensions, with a forearm of about 56 or 57 mm., from the larger *R. hildebrandtii* and probably should be considered as a distinct species, rather than a geographical race.

Coloration. This fine series of well made skins shows a decided difference in color from the series of *hildebrandtii* from Tanganyika collected by Loveridge on an earlier expedition. They are decidedly darker, a general light blackish brown, instead of buffy brown (cf. Ridgway) and can easily be separated by this character, thus confirming Hollister's judgment of their specific distinction.

Measurements. ♂. (Kirui) 75. 30. 13. 29. 177 mm., ♀. (Kirui) 73. 30. 12. 28. 181 mm.

Parasites. One had an hemipterous polycetenid as well as a large tick (*Ixodes simplex*) on its breast, many had encysted flies (*Ascodipteron*) in their wings as well as numerous streblids.

Habitat. All the Kirui series were taken in Robin Kemp's cave in the course of an hour. They simply swarmed in the low recesses at the back of this cave, the noise of their wings was like the running of the engine of a stationary car. When molested in one of these subsidiary caves they quickly migrated to another. We followed by crawling through the tunnel back into the main cave and thence to their fresh refuge. Associated with them, though in the proportion of one to ten, were some horseshoe bats (*Hipposideros caffer*) or perhaps the latter were more adroit at avoiding the butterfly net employed in capturing their companions.

I shot the Debasien bat at dusk as it hung up in a thorn tree to rest.

RHINOLOPHUS FUMIGATUS EXSUL Andersen

Rhinolophus fumigatus exsul K. Andersen, 1905, Ann. Mag. Nat. Hist. (7), 15, p. 74: Kitui, Kenya Colony.

Yng. (M. C. Z. 31172) Kirui, K. C. 5. ii. 34.

Discussion. This seems to be an uncommon species. Only one example, and that without skull, was available to its describer in 1905. It was one of the few species of the genus which the East African expeditions of the United States National Museum failed to find in that region. In addition to the male secured by Loveridge, the Museum of Comparative Zoölogy has a second from the Kenya forest, ten miles west of Chuka, collected by Dr. F. R. Wulsin in 1914. The skull shows the minute upper and lower premolars present. The hairy noseleaf and the forearm of about 51–52 mm. are distinctive in comparison with other East African members of the genus.

HIPPOSIDERIDAE

HIPPOSIDEROS CAFFER (Sundevall)

Rhinolophus caffer Sundevall, 1846, Öfvers. Kongl. Vet.-Akad. Förh., Stockholm, 3, p. 118: Near Port Natal, Natal.

7 ♂ (M. C. Z. 31844–6, 32062–5) Tsavo, K. C. 30. iii. 34.

Measurements. ♂. 52. 32. 8. 15. 136 mm.

Habitat. I captured all these at night with a butterfly net in one of the rooms of the abandoned house, three hundred yards north of the station, which I occupied. By day the bats apparently sleep in the roof, but at night fly in and out of the rooms through the broken window panes, and rest by hanging on the cornices.

HIPPOSIDEROS RUBER (Noack)

Phyllorhina rubra Noack, 1893, Zoöl. Jahrb. Syst., 7, p. 586: "Lügerrunjere"
i.e. Ngerengere River, Tanganyika Territory.

♀ (M. C. Z. 31150) Kirui, K. C. 23. i. 34.

♂ ♀ (M. C. Z. 31151-2) Elgoni, K. C. 23. i. 34.

Coloration. These three skins represent the brown phase.

Measurements. ♂. 61. 35. 8. 15. 147 mm., ♀. (Elgoni) 55. 38. 8. 15. 147 mm.

Parasites. A nycteribiid on one.

VESPERTILIONIDAE

PIPISTRELLUS NANUS (Peters)

Vespertilio nanus Peters, 1852, Reise nach Mossambique, Säugethiere, p. 63:
Inhambane, Mozambique.

7 ♂ 3 ♀ (M. C. Z. 31136-45) Kaimosi, K. C. 26-28. ii. 34.

2 ♂ 6 ♀ (M. C. Z. 31868-73, 32060-1) Mt. Mbololo, K. C. 23. iv. 34.

♂ (M. C. Z. 31867) Golbanti, K. C. 22. vi. 34.

Native name. *Eososi* (Kitaita).

Coloration. The series from Kaimosi averages slightly darker than the other specimens listed above which are from the coastal region. They can, however, be matched by specimens from Tanganyika Territory to the south, so that the difference is probably due to fading.

Measurements. ♂. (Kaimosi) 43. 34. 5. 8. 100 mm., ♀. (Kaimosi) 38. 30. 5. 8. 107 mm.

Breeding. One of the females from Kaimosi was carrying a young one at her breast on February 26, 1934.

GLAUCONYCTERIS ARGENTATA (Dobson)

Chalinolobus (Glauconycteris) argentatus Dobson, 1875, Proc. Zoöl. Soc. London, p. 385: Cameroon Mountains.

7 ♂ 8 ♀ (M. C. Z. 31879, 31881-7, 32052-8) Kikuyu, K. C. 14. iii. 34.

Measurements. ♂. 55. 46. 4. 9. 140 mm.

Breeding. Four of the females were carrying young.

Habitat. Dr. J. W. Arthur directed my attention to a circular patch on his lawn where the grass had been killed. It was about a foot in diameter and immediately beneath a solid cluster of these

bats, which were hanging in a correspondingly circular area of an ornamental 'palm' (*Dracaena* sp.) at a height of twelve feet from the ground.

After they had been photographed, during which process they showed no nervousness though the camera and operator were within six feet of them, I made one sweep of my net which resulted in the capture of thirty bats. Five were released one by one and photographed in flight, unfortunately the results were not a success. Ten were skinned and donated to the Coryndon Museum at Nairobi in appreciation of the facilities and materials afforded for skinning. I reached Nairobi at 11 A.M. and my young Mgishu skinner started on the work almost immediately continuing until he had finished the last of the twenty-five at 5 P.M.

MOLOSSIDAE

MOPS (ALLOMOPS) OSBORNI Allen

Mops (Allomops) osborni J. A. Allen, 1917, Bull. Amer. Mus. Nat. Hist., **37**, p. 473: Kinshasa, near Leopoldville, Belgian Congo.

♀ (M. C. Z. 31863) Bellazoni, K. C. 5. vi. 34.

5 ♂ 5 ♀ (M. C. Z. 31855-62, 31864-5) Ngatana, K. C. 14. vi. 34.

also 5 in alcohol with the same data as these last.

Native name. *Nundu* (Kipokomo).

Coloration. On comparing these skins with a considerable series from Ujiji, collected by Loveridge on a previous expedition, they seem to average paler on the throat and chest. In the Ujiji series, which must represent the typical race, the throat is gray in most cases, and this color extends to the upper chest. In two or three, however, the whole central part of the under surface is white from the dark chin to the anus.

In the Ngatana series only two out of the ten are dark throated, the others being pure white throughout the mid-ventral region. Notwithstanding this apparently average difference, the extremes are bridged by individual variation, so that it does not seem possible to recognize a coastal race. A few of the series have the entire dorsal surface of head and body mixed with whitish hairs, giving a slightly frosted effect, while others are uniformly brown above.

Measurements. ♂. 85. 52. 12. 19. 180 mm., ♀. 77. 49. 11. 17. 170 mm.

Habitat. These were obtained from the school house of a village, on the banks of the Tana, which had been abandoned by order of the medical officer of health.

CHAEREPHON HINDEI (Thomas)

Nyctinomus hindei Thomas, 1904, Ann. Mag. Nat. Hist. (7), **13**, p. 210: Fort Hall, Kenya Colony.

♂ ♂ (M. C. Z. 31866, 31877) Witu, K. C. 7. vi. 34.

Coloration. Although both these specimens agree in the pattern of white markings, with the midventral area and a line from armpit to anus white, wings white, interfemoral dark, the older specimen is much more russet brown than the younger, which is a grayish chocolate.

Measurements. ♂. 60. 41. 9. 17. 138 mm.

CANIDAE

THOS MESOMELAS MCMILLANI Heller

Thos mesomelas mcmillani Heller, 1914, Smithsonian Misc. Coll., **63**, No. 7, p. 6: Mito Andei Station, Kenya Colony.

♂ ♂ (M. C. Z. 31957, 31960) Tsavo, K. C. 3. iv. 34.

Coloration. These two jackals, from very near the type locality, agree with the coastal race in the pale sides, buff instead of rufous, and generally less rufous tints than the more inland race.

Native name. Muzozo (Kitaita).

Measurements. ♂. 745. 330. 162. 106 mm.

Dict. In the stomachs of both were numerous scraps of goat hide and hair, obviously trimmings picked up at the village; in addition there was much wild fruit.

Habits. Both were shot as they visited the carcass of a hyrax which I had pegged beneath a baobab, the first at 1.45 A.M., the second at 2.30 A.M. Their calls, which seemed to me to differ considerably from those of jackals in central Tanganyika, could be heard in each case for half-an-hour before the animal arrived.

LYCAON PICTUS LUPINUS Thomas

Lycaon pictus lupinus Thomas, 1902, Ann. Mag. Nat. Hist. (7), **9**, p. 439: Nyuki River Swamp, Rift Valley, Kenya Colony.

Native name. *Kiwao* (Kitaita).

Habits, etc. On arrival at Kibwezi, March 22, 1934, I made enquiries with a view to securing topotypes of the hunting dog (*L. huebneri*) described from here. Herr. Huebner, I learned, had been employed on the Dwa Estate many years before the War. I walked out to Dwa, which is four miles from Kibwezi station, and was told by Mr. A. B. C. Smith, the manager of Dwa Estate, that one of his staff, Mr. Cushny, had, only a fortnight before, shot and killed ten and wounded an eleventh hunting dog from a pack of twelve. The place was fifteen miles away and Mr. Smith very kindly arranged for a native to be sent to the spot. On his return, this man reported that no skulls were to be found, and presumed that hyenas had cleaned up the spot. At irregular intervals packs hunt through the Estate, usually at night. It would be very difficult to arrange to hunt such mobile creatures which are here one day and miles away the next.

At Tsavo, on April 4, 1934, I was awakened at daybreak, half-an-hour before sunrise, by the patter of feet outside the long-vacant house which I was occupying. Almost simultaneously a hoof sharply struck a tin can. Springing from bed, I stepped out on to the verandah. For a hundred feet around the house the ground is clear, beyond this the thornbush stretches like a blanket over the country, in every direction, so far as the eye can see. At the edge of the clearing stood a half-grown waterbuck calf; next moment it had disappeared into the bush.

Returning to my room, I began to dress and was putting on my puttees when my ears were assailed by the terrified bleating of the young waterbuck. The cries came from the front of the house, down by the river. Snatching up a rifle, I raced down the slope, dodging the thornbushes as best I could. Ahead of me sounded a heavy splash followed by much splashing. Some animal dashed through the grass at the river's brink, it was a hunting dog. I took a snapshot at it but missed being very much out of breath. Up to this time I had not given hunting dogs a thought having supposed that a crocodile had seized the calf or its mother. Later my gunbearer reported that he had seen the mother make off to the south as I ran down the hill.

The calf was standing in the middle of the Tsavo River, only its head and part of its back showed above the swift current. Some hunting dogs were in shallow water on the farther side but lost no time in scrambling out and up the bank. On my side two others, hidden in the rank grass, barked and yapped defiantly at me before taking to the thornbush. I followed them for a quarter-of-an-hour

but they kept well to cover. Returning to the river we found the buck still in the same place, we sat down to watch it, momentarily fearing that it would be taken by a crocodile. After waiting ten minutes, however, we saw the creature swim upstream then struggle up the farther bank. The dogs had been hunting silently until now, but later in the morning we heard them calling, and concluded that they made a kill about a mile down the river about 11 A.M.

According to the natives, hunting dogs visit Manda Island from time to time, harassing the dikdik, then return to the mainland.

MUSTELIDAE

MELLIVORA CAPENSIS SAGULATA Hollister

Mellivora sagulata Hollister, 1910, Smithsonian Misc. Coll., 56, No. 13, p. 2:
Mount Kilimanjaro, Tanganyika Territory.

Native skin (M. C. Z. 31951) Mt. Mbololo, K. C. 14. iv. 34.

Native names. *Ekore* (Karamojong); *kiscgi* (Kitaita).

Coloration. This skin agrees fairly well with Hollister's description and with other specimens from Tanganyika Territory. The buffy stripe continues from the forehead to the rump, while the remaining pale area of the back is darker with admixture of black hairs and others with rusty tips, perhaps in part due to staining. Where these animals live in red-soil country they become much stained with this earth.

Folklore. The following tale was related by my Karamojong gun-bearer. "Once upon a time a Karamojong woman was out in the bush when she came upon a ratel which had been covered with dirt by termites. Its ears and tail were showing, however. Exclaiming 'What good fortune to find an animal already dead,' she took some branches and brushed off the dirt. It was a time of scarcity or famine so she concealed the ratel among her skin clothing and returned home. On her meeting some neighbors, they asked her, 'What have you there?' To deceive them, she replied, 'Oh, nothing, a dead creature which has become very rotten.' When they would have seen it, she refused and, entering her hut, fastened the door securely.

This being done she instructed her child to build up the fire. Then told him to bring a knife with which to skin the ratel. The boy tried to cut the tough skin but failed. His mother ordered him to sharpen the knife. Then she held the ratel while he tried to cut into the skin.

at the throat. At this the ratel moved an ear. The boy cried, 'Mother, it is not dead.' 'Nonsense,' answered the mother. 'Do as I bid you.' The child then succeeded in making an incision whereupon the ratel, which had only been somnolent as a result of gorging itself upon honey and grubs, revived and attacked the child. The mother attempted to drive it off but the savage creature sprang upon her, scratching her head and face and biting her severely.

She shrieked aloud for help, the neighbors tried the door but found it fastened too securely for them to open. The woman's husband, who had been herding goats, was returning to the village when he heard the uproar. Leaving the goats in care of another son, he hurried to the house and broke down the door. As he did so, the ratel dashed out, the assembled neighbors hurled their spears at it, but not a spear penetrated the tough hide and the ratel made good its escape."

Compare this story with that of the Wakami relating to a civet as recorded under that species.

AONYX CAPENSIS HINDEI (Thomas)

Lutra capensis hindei Thomas, 1905, Ann. Mag. Nat. Hist. (7), 15, p. 78: Fort Hall, Kenya Colony.

♂ ♀ (M. C. Z. 31621-2) Mwahedio River, Kaimosi, K. C. 9. ii. 34.

Native names. *Lizibi* (Luragoli); *inzibi* (Lutereki).

Discussion. Two beautiful specimens of the clawless otter are referred to *hindei*, although they differ from the type as described by Thomas, in having the ears rimmed with white above as is usual in the species, instead of uniformly dark. As noted by J. A. Allen both this and the race *helios* from the Sotik were based on single individuals, so that until series of specimens can be compared, the value of the characters claimed for them cannot be estimated.

Measurements. ♂. 740. 425. 120. 33 mm., ♀. 600. 400. 130. 30 mm.

Parasites. Ticks (*Haemaphysalis leachii*) were abundant in their fur.

VIVERRIDAE

CIVETTICTIS CIVETTA SCHWARZI Cabrera

Viverra civetta orientalis Matschie, (not *V. orientalis* Hodgson, 1842 = *V. zibetha* Linnaeus) 1891, Arch. für Naturgesch., 1, p. 352: Zanzibar.

Viverra civetta schwarzi Cabrera, 1929, Mem. R. Soc. Español. Hist. Nat., Madrid, 16, No. 1, p. 36, footnote: Bagamoyo, Tanganyika Territory.

Viverra civetta matschiei Pocock, 1933, Journ. Bombay Nat. Hist. Soc., 36, p. 429, footnote.

♂ (M. C. Z. 31612) Sipi, U. 18. xii. 33.

♀ ♀ (M. C. Z. 31104, 32271) Butandiga, U. 9. i. 34.

♀ (M. C. Z. 31611) Bukori, K. C. 18. i. 34.

♂ ♀ (M. C. Z. 32203, 32257) Kaimosi, K. C. 15 & 23. ii. 34.

Native names. *Mugis* (Kisabei); *ndesi* (Lugishu); *kuteli* (Kitosh); *ndereet* (Kimasai); *ligunyuli* (Luragoli); *likunyuli* (Lutereki); *fungo* (Kitaita).

Coloration. The Sipi male is melanistic.

Measurements. ♂. (Kaimosi) 930. 400. 140. 55 mm., ♀. (Butandiga) 890. 410. 125. 52 mm.

Breeding. The big Butandiga female was suckling a large kitten, the latter measuring: ♀. 420. 180. 75. 41 mm. The Kaimosi female was also obviously nursing a family on February 15, 1934.

Diet. The Sipi civet was very emaciated and its stomach held only a mass of hair matted into the shape and size of an ordinary brown rat. One Kaimosi animal held a rat (*Oenomys b. editus*), the other a nosehorned viper (*Bitis nasicornis*) and some invertebrates.

Parasites. Ticks (*Haemaphysalis leachi*) were collected from the Sipi, Butandiga and Kaimosi civets.

Folklore. "Civets," said an Mkami to me, "rob our gardens of the maize, gorge upon the cobs, and then retire to the bush to sleep. They sleep so heavily with their mouths wide open that they deceive even the flies who, supposing them to be dead, assemble to lay their eggs about the gaping jaws. One day an Mkami discovered that his garden had been robbed, tracked the thief and found that it was a civet which had apparently succumbed from too heavy a repast. Wrapping the animal in banana leaves, he threw it over his shoulder and returned to the village where a beer-drink was in progress. As the Wakami ate civets in those days, and he was anxious to avoid sharing the meat with his neighbors, he entered his hut surreptitiously, closed the door, and built up a big fire.

"His wife and children gathered round as he thrust the *fungo* on the fire to roast. Immediately the creature awoke and dashing wildly about the hut broke utensils and scattered the fire. Seizing a spear the man attempted to kill the terrified animal, but in the uproar, smoke, and confusion accidentally speared his own child. On realizing what had happened, the mother and other children began to wail. The neighbors, hearing the outcry, broke in the door and dragged the

man away to a council of the old men who fined him heavily in goats for the murder."

"So that is what came of his not sharing his find with his friends," added Salimu, with a grin. "He lost the civet, killed his child, and it cost him several goats. The only profit was for the village elders who had a good feast at his expense."

Whether this moral tale was pure folklore, or whether it had some slight basis in fact, of course, I cannot say. It was related to me as an explanation of why the Wakami will not touch civet meat today. Strangely enough, my superior, and relatively cultured, Mganda cook had a great fondness for civet, toasting the meat over the fire. As his companions scorned to touch it, the carcasses of all the animals listed above fell to his share. In comparing the foregoing story with the Karamojong tale of a ratel, it should be remembered that the Wakami and Karamoja tribes are separated by seven hundred miles.

GENETTA SERVALINA BETTONI Thomas

Genetta bettoni Thomas, 1902, Ann. Mag. Nat. Hist. (7), 9, p. 365: Lagari, Mau district, Kenya Colony.

♂ (M. C. Z. 32305) Sipi, U. 26. xii. 33.

♀ (M. C. Z. 32207) Butandiga, U. 12. i. 34.

♀ (M. C. Z. 32306) Kaimosi, K. C. 10. ii. 34.

Native names. *Lungiri* (Lugishu); *kidarongo* (Luragoli); *shingangayu* (Lutereki).

Discussion. This small-spotted genet is evidently an eastern representative of the *sevalina* type of West African forests, and we have therefore regarded it as a subspecies of that animal. It furnishes another instance of the eastward extension of the forest fauna of the Congo basin, and is apparently a much less common species than *G. s. stuhlmanni* in the area here covered. Hollister (1918, p. 118) records two examples from the Kakamega region in the United States National Museum.

Measurements. ♂. 505. 445. 81. 41 mm., ♀. 412. 350. 77. 42 mm.

Breeding. The Butandiga genet is only a little more than halfgrown.

Diet. Rodent fur in the stomach of the Sipi specimen.

Parasites. Ticks (*Haemaphysalis leachi*) were present on the Butandiga example.

GENETTA STUHLMANNI STUHLMANNI Matschie

Genetta stuhlmanni Matschie, 1902, Verh. V. Int. Zoöl-Congr., Berlin, p. 1142: Bukoba, Tanganyika Territory.

- 3 ♂ 1 ♀ (M. C. Z. 32289-92) Sipi, U. 19-25. xii. 33.
♂ (M. C. Z. 32296) Butandiga, U. 9. i. 34.
♀ (M. C. Z. 32297) Kirui, K. C. 31. i. 34.
1 ♂ 10 ♀ (M. C. Z. 32293-5, 32298-303, 32308-9) Kaimosi, K. C.
9. i-17. ii. 34.

Native names. *Mwown* (Kisabei); *lunziri* (Lugishu); *kumondo* (Kitosh); *maragok* (Kimasai); *kidarongo* (Luragoli); *shitarongo* (Lutereki).

Coloration. Notwithstanding the great individual variation in color, this seems to be of a fairly definite sort. In skins from the same locality, the ground color is usually buffy, sometimes light gray without buffy tinge except that the pale rings of the tail are almost always somewhat tinged with buffy. The spots and broken stripes of darker, are either all black, or there is a variable amount of chestnut or rusty red hairs in the center of the black spot, these hairs predominating in some and in the extreme cases forming the entire spot to the practical exclusion of black hairs.

Measurements. ♂. (Kaimosi) 520. 420. 75. 44 mm., ♀. (Kaimosi) 500. 430. 85. 44 mm.

Breeding. This largest female from Kaimosi, killed on February 16, 1934, had two kittens, both of which were females, the bigger measuring 270. 222. 60. 35 mm.

Diet. The stomach contents of Sipi genets were noted as follows: (1) rodent fur; (2) rodent remains, apparently those of several young rats together with the reddish feathers of a bird, or birds, possibly those of nestling Paradise Flycatchers (*Tchitrea v. viridis*); (3) a young rat (*Otomys t. elgonis*) and a round white forest fruit smaller than an average marble. The Butandiga genet held a rat (*Tatera* sp.) while Kaimosi specimens contained: (1) rodent fur; (2) a tree rat (*Oenomys b. editus*); (3) a swamp rat (*Otomys t. elgonis*).

Parasites. Ticks (*Iacmaphysalis leachii*) on a Sipi and Kaimosi genet, the Sipi animal also harboring a tapeworm (*Taenia parva*).

GENETTA STUHLMANNI ERLANGERI Matschie

Genetta erlangeri Matschie, 1902, Verh. V. Int. Zoöl.-Congr., Berlin, p. 1143: Kitui, Kenya Colony.

- ♀ (M. C. Z. 32326) Mt. Mbololo, K. C. 25. iv. 34.
♀ (M. C. Z. 32304) Lamu Island, K. C. 12. v. 34.
♀ (M. C. Z. 32325) Ngatana, K. C. 12. vi. 34.

Native names. *Ludindi* (Kitaita); *kanu* (Kiswahili and Kipokomo).

Coloration. These are referred to the paler coastal race, although it must be admitted that many specimens are difficult to place. The adult from Lamu Island has a pale gray ground color with black spots and, except for the white instead of buffy rings on the tail, it is practically an exact match for the palest of the Kaimosi series of the typical form. The whitish rings on the tail characterize the two other specimens which are immature, whereas in all the Kaimosi series the rings are buffy. The same variation in the spots from black to red-centered or all-chestnut-red is seen in the coast form.

Measurements. ♀ . 500. 420. 87. 44 mm.

NANDINIA BINOTATA ARBOREA Heller

Nandinia binotata arborea Heller, 1913, Smithsonian Misc. Coll., **61**, No. 13, p. 9: Lukosa River, Kenya Colony.

2 ♀ (M. C. Z. 32249-50) Sipi, U. 18 & 22. xii. 33.

♀ (M. C. Z. 32248) Butandiga, U. 13. i. 34.

4 ♂ 1 ♀ (M. C. Z. 31101, 31623-4, 32193, 32251) Kaimosi, K. C. 14-24. ii. 34.

Type locality. The Kaimosi series are topotypes as they come from the forest through which the Lukosa (i.e. Yala) River flows.

Native names. *Mowe* (Kisabei); *liwala* (Lugishu); *ninamugogo* (Luragoli); *kunamugogo* (Lutereki).

Coloration. This series is very uniform in its ground tint as well as in the rather light spotting, but is not very different in these characters from Cameroon examples of the typical form, though in the latter the general tone is slightly darker.

Measurements. ♂. 580. 560. 80. 41 mm., ♀. (Kaimosi) 530. 530. 80. 38 mm.

Dict. One stomach held a tree rat (*Oenomys b. editus*), another a swamp rat (*Otomys t. elgonis*) at Kaimosi, all the other stomachs were empty and free of parasites.

Enemies. The bodies were eaten by the Bagishu who hunted them.

GALERELLA SANGUINEA IBEAE (Wroughton)

Mungos sanguineus ibeae Wroughton, 1907, Ann. Mag. Nat. Hist. (7), **20**, p. 118: Fort Hall, Kenya Colony.

♀ (M. C. Z. 32332) Tsavo, K. C. 2. iv. 34.

Discussion. The late Dr. J. A. Allen has advocated the use of the generic name *Galerella* for the mongooses of this group. Thomas's *Myonax* is perhaps not very different.

Measurements. ♀. 295. 280. 55. 25 mm.

Diet. The stomach was empty, these animals being diurnal feeders.

Habitat. At 8 A.M. I observed a pair of mongoose basking in company of a hyrax (*H. s. hindei*) on the top of a huge rock, the hyrax observed me and promptly disappeared. I stalked its companions, the male mongoose rose on its hind legs, meerkat fashion, the better to see me, then followed the hyrax as I fired at the female.

HERPESTES ICHNEUMON FUNESTUS (Osgood)

Mungos ichneumon funestus Osgood, 1910, Publ. Field Mus. Nat. Hist., Zoöl. Series, 10, No. 3, p. 17: Naivasha, Kenya Colony.

♂ (M. C. Z. 32245) Sipi, U. 11. xii. 33.

♂ (M. C. Z. 32246) Kirui, K. C. 30. i. 34.

2 ♂ 4 ♀ (M. C. Z. 32240-4, 32247) Kaimosi, K. C. 17-26. ii. 34.

Native names. *Ekosemate* (Karamojong); *churunguru* (Kisabei); *serengeta* (Lugishu); *anamambi* (Kitosh); *mogoect* (Kimasai); *lunamageki* (Luragoli); *linueli* (Lutereki).

Discussion. In spite of its large size, the dentition of this mongoose is noticeably weak in comparison with that of *Atilax*.

Measurements. ♂. (Kirui) 600. 460. 91. 35 mm., ♀. (Kaimosi) 540. 480. 82. 35 mm.

Breeding. A kitten (♂. 275. 150. 53. 26 mm.) obtained at Kaimosi on February 20, 1934, had milk only in its stomach.

Diet. At Sipi, rodent fur and the claw of a fowl. At Kaimosi, three animals each held a different species of rat, viz. *Oenomys b. editus*, *Pracomys t. jacksoni* and *Arvicanthus a. nubilans*.

Parasites. Nematodes (*Ascaris* sp.) were collected from one Kaimosi mongoose.

ATILAX PALUDINOSUS ROBUSTUS (Gray)

Athylax robustus Gray, 1864, Proc. Zoöl. Soc. London, p. 558: White Nile.

♂ (M. C. Z. 32256) Butandiga, U. 9. i. 34.

♂ (M. C. Z. 31606) Kaimosi, K. C. 12. ii. 34.

Native names. *Linsi* (Lugishu); *mugocet* (Kimasai); *lunamatu* (Luragoli).

Coloration. While both specimens agree closely in body color, the one from Butandiga has a much more uniformly black tail than the other, in which the color of the tail is about that of the body.

Measurements. ♂. (Kaimosi) 620. 360. 117. 39 mm.

Diet. The stomachs of both held the remains of small rodents.

Parasites. Ticks (*Haemaphysalis leachii*) were collected on the Butandiga mongoose.

ICHNEUMIA ALBICAUDA IBEANA (Thomas)

Herpestes albicaudus ibeanus Thomas, 1904, Ann. Mag. Nat. Hist. (7), 13, p. 409: Stony Athi, Kenya Colony.

♀ (M. C. Z. 32255) Kirui, K. C. 31. i. 34.

1 ♂ 4 ♀ (M. C. Z. 31601, 32252-4, 32258) Kaimosi, K. C. 12. ii-2. iii. 34.

♀ (M. C. Z. 31958) Kibwezi, K. C. 28. iii. 34.

♂ (M. C. Z. 31959) Tsavo, K. C. 3. iv. 34.

Distribution. This race occurs on Mount Mbololo where a freshly taken pelt was seen.

Native names. *Waranyet* (Kimasai); *usambaruo* (Lugishu); *kinucli* (Luragoli); *linucli* (Lutereki); *mwalasangali* (Kitaita).

Coloration. Heller (1913, Smithsonian Misc. Coll., 61, No. 13, p. 11) distinguished the white-tailed mongoose of the coastal area as *ferox* with Changamwe, near Mombasa, as type locality. Hollister (1918, p. 130) is inclined to doubt its validity and places it in the synonymy. The two specimens from Kibwezi and Tsavo listed above, are, however, distinctly lighter than those from Kaimosi and Kirui, with less of the long black tips to the hairs of the dorsal region, so that possibly it may be recognizable when series are compared. Melanism is common in the entire area, making an estimate of shades of dark or light rather more difficult. Two of the series, from Kirui and Kaimosi, are unusually dark, even the tails being almost wholly black with the exception of the gray-based hairs at their proximal end.

Measurements. ♂. (Tsavo) 560. 410. 101. 38 mm., ♀. (Kirui) 570. 450. 123. 45 mm.

Dict. At Kaimosi one mongoose had a rat (*Otomys t. elgonis*) and the scales of a viper (*Bitis nasicornis*) in its stomach, another a few small bones, snake's eggs, what were apparently lizard's eggs, together with a mass of beetle and other insect remains. The stomach of the Kibwezi mongoose was crammed with grasshoppers. The Tsavo animal had some scraps of meat but mostly vegetable matter. I shot this mongoose as it was sniffing at the carcass of a hyrax at 12.30 A.M. A second mongoose came at 4 A.M. but I missed it.

Parasites. Nematodes (*Physaloptera* sp). were found in the stomach of a Kaimosi mongoose.

HELOGALE UNDULATA RUFULA Thomas

Helogale undulata rufula Thomas, 1910, Ann. Mag. Nat. Hist. (8), 5, p. 194:
Rogoro, Kikuyu, Kenya Colony.

♀ (M. C. Z. 32132) Tsavo, K. C. 31. iii. 34.

♀ (M. C. Z. 32330) Mt. Mbololo, K. C. 26. iv. 34.

Native name. *Munuru* (Kitaita).

Coloration. The small mongooses of this genus seem rather variable in coloration, but it is not altogether clear as yet how far this is an individual matter.

Measurements. ♀. (Mbololo) 460. 165. 43. 20 mm.

Breeding. ♀ juv. (Tsavo) 180. 140. 43. 16 mm.

Habitat. The young mongoose was shot in the head with dust-shot from a .22 at a range of ten feet as it peered at me from the base of a thornbush into which it had run.

MUNGOS MUNGO COLONUS (Heller)

Crossarchus fasciatus colonus Heller, 1911, Smithsonian Misc. Coll., 56, No. 17,
p. 16: Southern Guaso Nyiro, Kenya Colony.

♀ (M. C. Z. 32331) Voi, K. C. 17. iv. 34.

Native name. *Munuru wa sanga* (Kitaita).

Distribution. In addition to the single specimen from Voi, a cranium was picked up in a cave near Kemp's Cave above Kirui, southeast face of Mount Elgon. The Banded Mongoose seems to be much less common in Kenya Colony than it is farther south.

Measurements. ♀ juv. 342. 222. 72. 21 mm.

FELIDAE

FELIS (LEPTAILURUS) CAPENSIS HINDEI Wroughton

Felis capensis hindei Wroughton, 1910, Ann. Mag. Nat. Hist. (8), 5, p. 205:
Machakos, Kenya Colony.

Felis capensis kempi Wroughton, 1910, Ann. Mag. Nat. Hist. (8), 5, p. 206:
Kirui, Mount Elgon, Kenya Colony.

♂ (M. C. Z. 31620) Kaburomi, U. 28. xii. 33.

♀ (M. C. Z. 31950) Golbanti, K. C. 25. vi. 34.

Native names. *Korobat* (Kisabei); *lutuku* (Lugishu); *indamamweli* (Luragoli and Lutereki).

Coloration. Hollister (1918, p. 175) has indicated that there seem to be no good reasons for recognizing a Mount Elgon race of serval, distinct from that of the lowlands to the southeast. The male secured by Loveridge at 10,500 feet on Mount Elgon is quite like one in the Museum collection from Kijabe, representing *hindei* with a similarly ochraceous-buff background above. On the other hand, the Golbanti skin from the coast is very much paler in the general tone, with pale buffy sides and feet, shading to nearly ochraceous buff in the very middle line of the back. It is a very good match for another specimen from Mwanza, south shore of Lake Victoria, so that the series at hand shows no clear distinction of a paler coastal and a richer-colored inland form, though possibly of a paler, more southern one. We have for the present, therefore, tentatively referred both to *hindei*.

Measurements. ♂. 870. 280. 185. 86 mm., ♀. 820. 300. 190. 88 mm.

Breeding. Regretfully one noted that the Golbanti serval, disturbed in long grass and shot on the run, was nursing a family.

Diet. Feet and fur of a mole rat (*Tachyoryctes ruddi*) in the Kaburomi animal, two rats (*Mastomys c. hildebrandti*) and two Harlequin Quail (*Coturnix delegorguei*) in the Golbanti specimen.

Parasites. Hippoboscids flies (*Hippobosca longipennis*) were very abundant in the fur of the female.

FELIS OCREATA NANDAE Heller

Felis ocreata nandae Heller, 1913, Smithsonian Misc. Coll., **61**, No. 13, p. 14:
Lukosa River, Nandi Escarpment, Kenya Colony.

2 ♂ 6 ♀ (M. C. Z. 32263-70) Near Lukosa R., Kaimosi, K. C.
14. ii.-7. iii. 34.

Native names. *Lugaho* (Luragoli); *shitarongo* (Lutereki).

Coloration. This topotypic series shows much variation in the tint of the occiput and ears, much more mixed with black in some than in others, while the backs of the ears are nearly red or in others blackish. In two new-born kittens the pattern of indistinctly-marked cross-stripes and spots of black is much more obvious than in the adults which tend to lose all the body markings, and develop a nearly uniform buffy-gray coat with faint indications of the stripes; in the kittens the fine longitudinal black stripes are clearly marked but disappear in the adults.

Measurements. ♂. 505. 300. 117. 57 mm., ♀. 570. 352. 130. 64 mm.

Breeding. On March 6, 1934, two kittens, apparently only born that day were brought in, they measured: ♂. 152. 70. 36. 15 mm.,

♀. 155. 70. 36. 15 mm. On February 25, a half-grown kitten was collected.

Dict. Four swamp rats (*Dasymys h. helukus* and *Otomys t. elgonis*) were recovered from the stomachs of three cats, those of all the rest were empty.

Enemies. The natives frequently find the kittens of the wild tabby and take them to their huts where they remain for a time. One such, judging by its cropped ears, had evidently been in captivity for some time.

LORISIDAE

PERODICTICUS POTTO IBEANUS Thomas

Perodicticus ibeanus Thomas, 1910, Abstr. Proc. Zool. Soc. London, No. 81, p. 17; Kakamega Forest, Kenya Colony.

3 ♂ 2 ♀ (M. C. Z. 31117-21, 31720) Kaimosi, Kakamega Forest, K. C. 23. ii.-9. iii. 34.

Distribution. The potto has never been recorded from Mount Elgon, but the two Bagishu skimmers from Sipi, western slopes of Elgon, were most emphatic that it is known to them.

Native names. *Likeue* (Luragoli); *shakami* (Lutereki).

Coloration. Considerable variation in color is displayed by this series of topotypes; Hollister (1924, p. 11) pointed out the same thing with regard to his series of five from this locality. The general ground color varies from a distinctly grayish buff to a pale ochraceous, much mixed with black above, especially on the shoulders. The white tipping of the hairs, if present, results in a frosted appearance, but this is characteristic of immaturity according to Schwarz (1931, Ann. Mag. Nat. Hist. (10), 8, p. 249). It might be pointed out that the correct spelling of the type locality is Kakamega, not Kakumega, and it is in Kenya Colony, not Uganda as stated by Schwarz.

Measurements. ♂. 340. 65. 75. 24 mm., ♀. 350. 74. 80. 29 mm.

Dict. Dr. P. J. Darlington has kindly examined the stomach contents of one of these animals and reports it to consist of: Fragments and whole examples of some fifteen to twenty ants; pieces of several beetles, probably Scarabaeidae; hair; cotton or plant fibres; plant fragments resembling grasses.

Notes. On the night of our arrival at Kaimosi, February 7, I heard what I took to be a potto in a tree near my tent. A few nights later I definitely heard one in a tree over the tent, the next night at 8.30 p.m. it was startled into defaecating on the tent by a noisy party of natives

returning homewards along the road. I ran outside with a flashlight and shone its eyes. These glowing eyes seemed very close, so fearful of damaging a valuable specimen I backed off thirty feet further before firing with No. 8 shot from an open barrel. The animal made off and daylight revealed that I was really too far away.

I then offered a reward of two shillings (50 cents U. S.) for the first potto to be brought in but had to wait a fortnight before one turned up. This potto was alive and practically uninjured having received only a slight bite from a dog on its right hind foot. It was slow and clumsy on the ground but clambered quickly about trees. When put on small trees it invariably clambered downwards, head down, and went in search of a larger tree. Another potto showed that they can really make quite a respectable pace on the ground when so inclined. If molested, they would turn and snap with astonishing rapidity.

The best account of the habits of this creature will be found in Pitman (1931, "A Game Warden among his Charges." London, pp. 158, 274).

Parasites. A tick (*Ixodes ugandanus*) in the fur of one, and a nematode in the stomach.

GALAGIDAE

GALAGO CRASSICAUDATUS LASIOTIS Peters

Galago lasiotis Peters, 1877 (1876), Monatsb. Akad. Wiss. Berlin, p. 912: Mombasa, Kenya Colony.

Galago crassicaudatus lasiotis Schwarz, 1931, Ann. Mag. Nat. Hist. (10), 7, p. 41.

♂ ♀ (M. C. Z. 31721-2) Mt. Mbololo, K. C. 19 & 28. iv. 34.

Native name. *Mwongagi* (Kitaita).

Coloration. Hollister (1924, p. 12) mentions a specimen from this locality which had a white tail tip. The amount of white at the tip is subject to variation. One of our specimens has the terminal third of the tail dark blackish brown, while in the other the distal third is a mixture of pale gray and dark brown but no white.

Measurements. ♂. 260. 310. 50. 45 mm., ♀. 290. 370. 85. 45 mm.

Habitat. The male was shot within a few hundred feet of the male *Galago s. braccatus* in the rain forest capping the mountain at 4,800 feet. Both were shot the same night at about 7.30 p.m. by shining their eyes, a rather difficult business for these galagoes turn away

their heads or conceal their eyes very quickly after the light is turned upon them. The second specimen was killed by a native near the foot of the mountain at about 1,500 feet.

GALAGO SENEGALENSIS ALBIPES Dollman

Galago braccatus albipes Dollman, 1909, Ann. Mag. Nat. Hist. (8), 4, p. 549: Kirui, Mount Elgon, Kenya Colony.

Galago senegalensis albipes Schwarz, 1931, Ann. Mag. Nat. Hist. (10), 7, p. 41.

♂ (M. C. Z. 31288) Sipi, U. 21. xii. 33.

♂ ♀ (M. C. Z. 31286-7) Kirui, K. C. 18 & 20. i. 34.

Distribution. This, according to Schwarz, is the form of *senegalensis* inhabiting the "uplands of Kenya Colony west of the Rift Valley." In addition to the specimens listed above, the Museum of Comparative Zoölogy has one from Mwanza and another from thirty miles south of Tabora, Tanganyika Territory. These are so closely similar that they must be regarded as representing the same race, having uniformly gray backs, and the limbs (especially the hinder pair) faintly washed with buffy.

Native name. *Karara* (Lugishu); *kaerarut* (Kimasai); *makwinyet* (Kitosh).

Measurements. ♂. (Kirui) 200. 270. 70. 46 mm., ♀. 180. 230. 65. 42 mm.

GALAGO SENEGALENSIS BRACCATUS Elliot

Galago braccatus Elliot, 1907, Ann. Mag. Nat. Hist. (7), 20, p. 187: Tsavo River, near Mount Kilimanjaro, Kenya Colony.

Galago senegalensis braccatus Schwarz, 1931, Ann. Mag. Nat. Hist. (10), 7, p. 41.

♀ (M. C. Z. 31724) Tsavo River, K. C. 31. iii. 34.

♂ (M. C. Z. 31725) Mt. Mbololo, K. C. 19. iv. 34.

Native name. *Monarang* (Kitaita).

Coloration. The topotype has the outer side of the limbs and the middle of the belly washed with pale yellow.

Measurements. ♂. 160. 170. 26. 30 mm., ♀. 170. 240. 60. 42 mm.

CERCOPITHECIDAE

CERCOPITHECUS NICTITANS SCHMIDTI Matschie

Cercopithecus schmidti Matschie, 1892, Zoöl. Anz., 15, p. 161: Forest between Mengo and Mjongo, Uganda.

Lasiopyga ascanius kaimosae Heller, 1913, Smithsonian Misc. Coll., **61**, No. 17, p. 10: Upper Lukosa River, near the mission station of Kaimosi, Kenya Colony.

3 ♂ 10 ♀ (M. C. Z. 31984, 31988-96, 31998-32000) Upper Lukosa River, Kaimosi, K. C. 19. ii.-3. iii. 34.

Distribution. This species has not been recorded from Mount Elgon but I observed two red-tailed monkeys, which I feel reasonably certain were of this race, in company of a troupe of blue monkey (*C. m. stuhlmanni*) at Sipi.

Native names. *Enhondo* (Luragoli); *ikhondo* (Lutereki).

Measurements. ♂. juv. 220. 295. 76. 26 mm., ♀. 490. 680. 125. 25 mm.

Breeding. One of the females shot on March 3 contained an embryo, two others were carrying young of different ages, these measured: ♂. 185. 271. 67. 27 mm., ♂. 195. 295. 78. 22 mm.

Enemies. Both Bagishu and Watereki eat these monkeys and from the skill with which the Watereki boys and men climb lianas in pursuit of them, I judge that they frequently hunt them.

Habits. I was puzzled, when hunting these monkeys, to note the absence of large males and the preponderance of juveniles. The Watereki who accompanied me, explained that after the first rush of the troupe the males invariably descended to the ground and made off through the underbrush unless the hunters were accompanied by dogs. We tested this statement and found it to be perfectly true. Still there remained the large proportion of young monkeys which, when surprised, made off with shrill piping cries. Undoubtedly the species is very prolific but there seems to be a tendency for the adult females to remain concealed in the foliage when the alarm is given and the youngsters make off. I also observed that where the cover in their immediate vicinity is scanty, the females make a dash for the nearest liana-smothered tree—which are plentiful enough in this magnificent forest—and there seek concealment. Familiar as I am with the ways of colobus and blue monkey, I am confident that neither of these will remain concealed to the extent practised by Schmidt's Monkey. I have known them to remain quietly without giving a sign as the lianas were roughly shaken to the accompaniment of hoarse cries and shouts, nor even move until a climber was within twenty feet of them. On March 3, I shot eight with ten shots, losing none.

CERCOPITHECUS AETHIOPS JOHNSTONI Pocock

(*Cercopithecus pygerythrus*) *johnstoni* Pocock, 1907, Proc. Zool. Soc. London, 2, p. 738: Moshi, south side of Mount Kilimanjaro, Tanganyika Territory.
Cercopithecus aethiops johnstoni Schwarz, 1926, Zeitschr. f. Säugetierk., 1, p. 40.

3 ♀ (M. C. Z. 31947-8, 31975) Kibwezi, K. C. 26. iii. 34.

♂ (M. C. Z. 31961) Golbanti, K. C. 22. vi. 34.

Distribution. Also seen at Tsavo.

Native name. *Tsarow* (Kitaita).

Discussion. The coastal specimens should be nearly like the supposed races *tumbili* (from Ndi) and *contingua* (from Changamwe). Both these, however, are regarded by Schwarz in his revision as synonyms of *johnstoni*, this race extending from the coast to the Rift Valley in Kenya Colony.

Coloration. These skins are fairly uniform in color, though that of the Golbanti male is distinctly more buffy yellow along the sides than are those of the Kibwezi females.

Measurements. ♂. 390. 500. 118. 33 mm., ♀. 450. 530. 127. 33 mm.

Habitat. These bold little guenons were shot from a large troupe feeding in a wild fig tree close to the station at Kibwezi. The Golbanti monkey was one of two animals in a tree close to the rest house; on picking it up I was surprised to find a cord tightly about, and almost cutting into its waist. As nobody in the village claimed to have lost a monkey it seems possible that it had been caught in a snare and gnawed itself free.

CERCOPITHECUS AETHIOPS CALLIDUS (Hollister)

Lasiopyga pygerythra callida Hollister, 1912, Smithsonian Misc. Coll., 59, No. 3, p. 1: South end of Lake Naivasha, Kenya Colony.

♂ juv. ♀ (M. C. Z. 31997, 32001) Mt. Debasien, U. i. xii. 33.

♀ juv. (M. C. Z. 31614) Kirui, Mt. Elgon, K. C. 1. ii. 34.

Native names. *Akwadogot* (Karamojong); *chokca* (Kisabei); *musoni* (Lugishu).

Measurements. ♀. 515. 560. 115. 33 mm.

Breeding. This female was nursing a young male which was chloroformed on January 1, 1934, when it measured 212. 270. 68. 28 mm.

Notes. These guenons are common along the gallery forest fringing the Amaler River from 5,000 feet down to the plains of western Debasien. Several times troupes slept in the trees in the vicinity of our camp. On November 30 several were secreted in a small but dense clump of foliage in a tall tree at the edge of our camp clearing. They

remained close until stones rattling through the foliage caused a small monkey to dash out, it was followed shortly afterwards by a monkey carrying a young one on her breast. I could have shot either but refrained. There were plenty of other monkeys in the trees round about but very wary.

On returning to camp at noon on December 1, I was told that monkeys had been in the vicinity all morning; just at that moment a monkey left the tree from which we had dislodged the trio the previous evening. Thinking that it was a solitary male I shot it, it dropped stone dead; when I picked it up I found that it was a nursing female. Shortly afterwards a young monkey started crying in a nearby tree. Blazio, a Baganda cook who was a splendid climber, brought it down from the very topmost branches; as he ascended we saw the other young monkey leave the tree in full view. It seemed certain that this nursing female was being accompanied by her youngster from a previous birth.

From the very first the baby monkey, which I should judge was about a fortnight old, took to sucking milk from an improvised teat attached to a small bottle. At first he took half-a-bottle at a time but within a fortnight this was increased to two bottles. It was an amusing sight to see him standing on his hind legs and holding on to his bottle with both hands as he rapidly absorbed its contents. What a commotion was raised when the first bottle was finished before the second bottle could be substituted! Three weeks after capture he ate biscuits and banana with gusto.

At first we found this monkey rather a nuisance as he wanted to be carried the whole time and squeaked continually to be picked up if left alone. While carried he looked at surrounding objects with great interest, turning his head this way and that. On safari he was tied up in a white cotton sugar bag, dropped into a haversack which was carried by a native. He appeared to appreciate this manner of travelling for he never cried and seemed willing to forego regular meal times so long as the motion of being carried continued. He sucked the fingers of his right hand continuously. Unfortunately he developed a complaint of the digestive tract which was rather stubborn and it seemed best to chloroform the little fellow.

CERCOPITHECUS MITIS KIBONOTENSIS Lönnerberg

Cercopithecus albogularis kibonotensis Lönnerberg, 1908, in Sjöstedt, "Wiss. Ergeb. Schwed. Zool. Exped. Kilimandjaro, Meru umgeb. Massaistepen." 1, No. 2, p. 3: Kibonoto, Mount Kilimanjaro, Tanganyika Territory.

Lasiopyga albogularis maritima Heller, 1913, Smithsonian Misc. Coll., **61**, No. 17, p. 8: Mazeras, Kenya Colony.

Lasiopyga albogularis kima Heller, 1913, Smithsonian Misc. Coll., **61**, No. 17, p. 9: Mount Mbololo, Taita district, Kenya Colony.

Cercopithecus leucampyx kibonotensis Schwarz, 1928, Ann. Mag. Nat. Hist. (10), **1**, p. 655.

♂ (M. C. Z. 31935) Kibwezi, K. C. 24. iii. 34.

♂ (M. C. Z. 31937) Mt. Mbololo, K. C. 14. iv. 34.

2 ♂ 3 ♀ (M. C. Z. 31936, 31962-3, 31973, 32288) Ngatana, K. C. 11-15. vi. 34.

Native names. *Ngima* (Kitaita); *chima* (Kipokomo). Being corruptions of the Kiswahili *kima*.

Discussion. The specimen from Mount Mbololo is a topotype of Heller's race, *kima*, but though Hollister (1924, p. 36) treated *kima* as well as the supposedly paler race *maritima* as distinct, Schwarz (1928, p. 655) relegates both to the synonymy of *kibonotensis*.

Coloration. In our Mbololo specimen the white collar is much less nearly complete than is the case with the Kibwezi monkey where it lacks about 35 mm. of forming a complete ring.

Measurements. ♂. (Mbololo) 595. 660. 150 40 mm., ♀. 470. 670. 120. 37 mm.

Parasites. Nematodes (*Abreviata* sp.) were present in Ngatana specimens.

Enemies. Deadfall traps are employed by the Wapokomo to kill these monkeys which they prize as an article of diet.

Habits. These monkeys are very abundant on the summit of Mount Mbololo and, strangely enough, are much less wary than the other creatures of the forest, be they squirrels, blue duiker or hyrax. It may be that they are no longer hunted for food by the Wataita. With a little cautious stalking, one might be certain almost any morning of surprising a party feeding, always a pleasant sight, and watch them until detected by some member of the troupe when all would go bounding away for a short distance. Vocally they were very quiet, their presence only being betrayed by movements of the foliage or the dropping of rejected fragments. Occasionally the piping whistle of a young monkey would be heard or more rarely still the deep grunt of a male who had detected the intruder from afar.

CERCOPITHECUS MITIS STUHLMANNI Matschie

Cercopithecus stuhlmanni Matschie, 1893, Sitz. Ges. naturf. Freunde Berlin, p. 225: North of Kingawana, between Lakes Albert Edward and Albert, Belgian Congo.

Cercopithecus leucampyx elgonis Lönnberg, 1919, Rev. Zoöl. Afr., 7, p. 134: Mount Elgon.

♀ ♀ (M. C. Z. 31986, 32003) Sipi, U. 21. xii. 33.

♀ ♀ (M. C. Z. 32002, 32004) Butandiga, U. 10. i. 34.

♂ ♀ ♀ (M. C. Z. 31615, 31985, 31987) Elgonyi, K. C. 25. i. & 4. ii. 34.

Distribution. Mount Elgon apparently marks the northeastern limit of the range of this subspecies.

Native names. *Sirul* (Kisabei); *ekobe* (Lugishu); *sibolit* (Kimasai); *kikutusi* (Kitosh); *imwawihondo* (Lutereki).

Discussion. Schwarz (1933, Zeit. für Säugetierk., 8, p. 278) has shown that *mitis* should replace *leucampyx* as the specific name for the monkeys of this group. Previously he stated that Lönnberg's *elgonis* is a synonym of *stuhlmanni*, a conclusion in which we would concur after comparing the seven Elgon skins listed above with one from the forests of eastern Ruwenzori.

Measurements. ♂. juv. 305. 423. 105. 77 mm., ♀. (Sipi) 570. 730. 140. 38 mm.

Breeding. On January 10, I fired at a monkey hiding in dense foliage and it proved to be a nursing female with a young one (♀. 285. 362. 82. 30 mm.), both were killed outright with No. 3 shot in the head. There was a fetus in a female killed at Elgonyi on February 4, 1934.

Enemies. The blue monkey is much hunted by the Bagishu for its flesh; at Sipi a small crowd collected while the animals were being skinned. The bodies were carried off by a wrangling party of natives who all but fought over the division of the meat, later one encountered individuals carrying off limbs carefully wrapped in banana leaves. At Butandiga the carcasses were similarly in great demand.

Habits. As with allied races it was found that these blue monkeys associated with troupes of colobus, apparently for mutual protection.

CERCOPITHECUS NEGLECTUS Schlegel

Cercopithecus neglectus Schlegel, 1876, Mus. des Pays-Bas, Simiae, p. 70: White Nile(?).

♂ (M. C. Z. 31616) Kirui, K. C. 5. ii. 34.

Distribution. The type of this species, now in the British Museum, was secured by Petherick on the White Nile, but Schwarz doubts if this is the actual place of its origin. Elliot refers to other specimens in the British Museum from north of Lake Rudolf. The general range

is thus across the great forest westward to the mouth of the Congo, whence, near Brazzaville, came the type of *brazzae*, regarded by Schwarz as a synonym. Our specimen appears to be the first recorded from Mount Elgon, Kirui's village being on the southern slopes.

Discussion. The skull, compared with that of *C. m. stuhlmanni*, shows a number of minor differences, particularly in the width of the posterior narial opening and in the form of the audital bullae which converge to form a deep keel anteroventrally.

Coloration. This Elgon example has the tail black mixed with whitish hairs quite to the tip, instead of being all black as in two specimens from the Cameroons and a third from southeastern Congo. Possibly after all, *brazzae* may prove to be a recognizable western race.

Measurements. ♂. 595. 630. 148. 38 mm.

Note. This monkey was killed by a native, aided by his dog, and brought into camp in the flesh.

CERCOCEBUS GALERITUS GALERITUS Peters

Cercocebus galeritus Peters, 1879, Monatsb. Akad. Wiss. Berlin, p. 830, pls. iB and iii: Miatola, mouth of Osi and Tana Rivers, Kenya Colony.

♂ (M. C. Z. 31934) Wema, Ngatana, K. C. 16. vi. 34.

Distribution. Very little is known of this mangabey, which seems to be confined to the gallery forest along the lower reaches of the Tana River. It is the only East African representative of the genus east of the general bounds of the central African forests.

Native name. *Garawa* (Kipokomo).

Measurements. ♂. 600. 620. 158. 39 mm.

Diet. According to the Wapokomo these animals raid their rice crops but only when such are in close proximity to the forest.

Habits. At dawn one hears the deep-toned bark of the old males soon to be followed by the squeals of the younger mangabeys. The troupes keep much to the ground in the forest though ascending the trees to feed, or when disturbed, to see who is coming. Having located the danger, they drop to the ground and run off to the accompaniment of an uproar such as one associates with baboons. Sections of the forests were waterlogged and here I encountered the mangabeys in the trees as I waded about in the knee-deep water.

PAPIO FURAX Elliot

Papio furax Elliot, 1907, Ann. Mag. Nat. Hist. (7), 20, p. 498: Lake Baringo, Kenya Colony.

♂ (M. C. Z. 32006) Kirui, K. C. 6. ii. 34.

♀ (M. C. Z. 31619) Kaimosi, K. C. 19. ii. 34.

Native names. *Echum* (Karamojong); *nyanya* (Kimasai); *ngugi* (Luragoli and Lutereki).

Discussion. These are referred to *P. furax*, although until a general review of the baboons can be made, it is not possible to make a final estimate of the validity of some of the forms. According to Hollister (1924, p. 18) this species "is readily distinguishable by the shortness of the rostral portion of the skull" from other East African forms. In the Kaimosi skull the distance from the rim of the orbit to the tip of the premaxillary is 99 mm.

Coloration. This Kaimosi specimen, an adult female, has the central area of the backs of hands and feet blackish with a few ochraceous hairs, and bordered by a paler area. The general color is ochraceous mixed with black.

Measurements. ♂ juv. 340. 255. 115. 52 mm., ♀. 710. 350. 181. 52 mm.

Dict. Green vegetable matter in both stomachs, maize being recognizable.

Folklore. The following tale is from the Maragoli of Kaimosi. One day a man named Madugi was digging a pit in the forest in which to trap animals. As he was digging, some baboons passed by and hailed him. He answered "Yoo," then the baboons asked why was he digging. "I am digging for rats," replied Madugi. "Perhaps you are digging a trap in which to catch us and other animals," suggested the baboons. The man denied this, asserting that he was only digging for rats. However the baboons would not believe him, saying, "We, ourselves, know that indeed it is a trap which you are digging, come now we will fight with you over this." "With what kind of sticks shall we fight?" asked Madugi. The baboons answered, "We will fight with *tsikhuvu* (a species of shrub with many leaves)." The man agreed for he knew that *tsikhuvu* could not harm anyone.

Madugi then procured a branch of *tsikhuvu* and concealed a sword among the leaves. When he was ready he invited the baboons to select one of their number to fight him, and this being done, cried, "Come on and fight, you may begin." The baboon, armed with a *luhuvu* (singular, i.e. one branch) hit the man and Madugi struck back, his hidden sword piercing the baboon. "With what are you cutting me," cried the baboon. Madugi lied, saying, "Nothing, this is only *tsikhuvu*." They continued the fight and as before the baboon

was wounded by the concealed weapon. This time the baboon cried out, "You are cutting me with a sword." "True," said Madugi, "I have a sword." As soon as they heard this all the other baboons fled and Madugi killed the baboon with whom he had been fighting. Then the man returned home and boasted of the fight in which he had killed a baboon by deceit and treachery.

One day, a long time ago, a certain woman took her baby with her when she went to work in her garden. She did this because she had no little nurse girl with whom to leave the baby. On arriving at the garden she laid the sleeping child in the shade of a tree. Then she proceeded to plant the grain. Later, when the mother returned to get the child she failed to find it. She thought that perhaps she had forgotten just where she had placed it, and was hunting round about when a baboon calling to her, said, "I, myself, stole your child." Then the mother answered, "Oh, please give me my child, I am ready to return home." The baboon answered, "No, I, myself, will not give you your child because I like to look at it."

The distracted woman returned home to tell her husband. On hearing the news the man called together the villagers and said, "My wife took our child with her when she went to work in the garden, and now a baboon has stolen the child." The neighbours replied, "Ask your wife to show us this baboon." The woman accompanied them and pointed out the tree into which the baboon had climbed with the child. On seeing the people peering up into the tree, the baboon called to them, saying, "What will you do if I kill this child." The people answered, "You had better give up the child." The baboon replied, "Leave the child and let me play with it." On hearing this some of the neighbours said, "It would be well to shoot the baboon with an arrow and recover the child." Others objected, saying, "It would be unwise to kill the baboon, let him play with the child until he is tired." The mother of the child also agreed, saying, "It would be best to leave the child with him." It was now about six o'clock in the evening when the people started back to their homes leaving the child with the baboon.

About two hours later the baboon brought the child and placed it outside the door of the mother's hut, then it took some water and poured it over the child so that the baby cried. The baboon called out, "I, myself, have brought your child." Then the mother knew that her baby had been returned alive and there was great rejoicing in the home that night.

PAPIO IBEANUS Thomas

Papio thoth ibeanus Thomas, 1893, Ann. Mag. Nat. Hist. (6), 11, p. 46: Lamu, Kenya Colony.

♂ (M. C. Z. 31949) Voi, K. C. 11. iv. 34.

Skull (M. C. Z. 32287) Kitau, Manda Id., K. C. 15. v. 34.

Type locality. This baboon does not occur at Lamu township on Lamu Island except in captivity. It is, however, exceedingly abundant on the mainland which was formerly known as Lamu district, or loosely "Lamu" in the vague way that "Zanzibar" was also applied to the mainland opposite though with better justification.

Distribution. Also seen at Kibwezi, Tsavo and Witu. In the dom palm forests just north of Witu they were both numerous and bold, finding a plentiful supply of fruit in the mango trees scattered through the bush, eloquent testimony to the fact that much of this region was under cultivation in the slave era.

Native name. *Fubi* (Kitaita).

Discussion. The topotypic skull from Manda Island, Lamu district, is that of a very old male. As the result of an injury, or possibly caused by an abscess resulting from a broken canine, considerable necrosis has taken place in the right suborbital region. The edges of the bone have become somewhat smoothed with a slightly irregular bony deposit at the front and rear edges of the lesion. In this old male, the sutures have all fused, even those of the nasals are quite obliterated. The teeth are worn but in good condition, except that the crown of the middle molar below the wound has gone, and the right canine is broken off. The last molar of the left side is missing and its alveolus wholly resorbed.

The specimen from Voi is provisionally regarded as the same although the rostrum of the skull is considerably shorter, being 109 mm. from orbit to tip of premaxillary as against 124 mm. in the big male from Kitau. Its coat is pale buffy gray, only slightly mixed with black, but it is rather worn and perhaps faded.

Measurements. ♂. 800. 620. 315. 70 mm.

PITHECIDAE

COLOBUS POLYKOMOS MATSCHIEI Neumann

Colobus matschiei Neumann, 1899, Sitz. Ges. naturf. Freunde Berlin, p. 15: Kwa Kitoto, near Kisumu, Kenya Colony.

Colobus occidentalis matschiei Hollister, 1924, U. S. Nat. Mus., Bull. 99, p. 45.

Colobus abyssinicus elgonis Granvik, 1924, Lunds Univers. Arsskr. N. F., 21, No. 3, p. 4: Mount Elgon, Kenya Colony.

♂ ((M. C. Z. 31105) Mt. Debasien, U. 16. xi. 33.

♂ ♀ (M. C. Z. 31106, 31617) Elgonyi, K. C. 25. i. 34.

♂ (M. C. Z. 32005) Nandi Forest, K. C. 14. ii. 34.

Distribution. Said not to occur at Sipi and Butandiga on western Elgon but in the forests above the latter locality. Formerly present in the Sipi forests but exterminated by the Bagishu hunters.

Native names. *Echumwa* (Karamojong); *mangesia* (Kisabei); *lilubis* (Lugishu); *mongesiet* (Kimasai); *kendubisi* (Kitosh); *induviri* (Luragolis); *nduviri* (Lutereki).

Coloration. Both Elgonyi specimens have the white brow band wide and continuous; in the Debasien animal it is a trifle narrower. In the former the shoulder stripe nearly reaches the white of the cheeks, but in the latter it is separated from the cheeks by a wider space.

Measurements. ♂. (Elgonyi) 650. 640. 180. 40 mm., ♀. 630. 630. 168. 38 mm.

Breeding. Immediately after I shot the Elgonyi female, a big young guereza, which had been concealed higher up in the same tree unknown to me, made off. Though not entirely weaned it was well able to take care of itself.

The juvenile male (370. 420. 125. 32 mm.) from the Nandi Forest twenty-five miles east of Kaimosi, was being hugged by its mother, despite its large size. They separated when disturbed. Its stomach held only vegetable matter as far as one could see; there was no trace of milk.

Enemies. Some Karamojong refused the meat of the Debasien colobus but it was eaten by a party of Acholi in search of work.

Habitat. The Debasien colobus was shot from a party of half-a-dozen in the large wood between the last two hills at the western foot of the mountain. They were fairly plentiful and exceedingly tame on the mountain above 7,000 feet.

In the Elgonyi forest, though their deep throaty cries were heard at least once a day, generally towards sunset, or in response to a shot, I should say that they are not common. A four-hour hunt only revealed two.

COLOBUS BADIUS RUFOMITRATUS Peters

Colobus rufomitratatus Peters, 1879, Monatsb. Akad. Wiss. Berlin, p. 829, pls. ia and ii: Muniuni, Kenya Colony.

Colobus badius rufomitatus Schwarz, 1928, Zeitschr. für Säugetierk., **3**, p. 95.

3 ♂ 1 ♀ (M. C. Z. 31938-41) Wema, Ngatana, K. C. 13 & 16. vi. 34.

Distribution. The four specimens of this rare monkey are from the forests near Wema and Ngatana villages about thirty miles in a direct line from the mouth of the Tana River, therefore not far from the type locality. The type, a male, is in the Berlin Museum; in addition there are a pair from the lower Tana in the British Museum which, according to Schwarz, agree perfectly with the type.

Native name. *Mbalawasi* (Kipokomo).

Discussion. Schwarz (1928, p. 95) in his review of the red colobi, regards *rufomitatus* as a geographic race of *C. badius*, the distribution of which as a species, is now more discontinuous in eastern Africa than that of the black-and-white group for there seems to be no representative of it in Kenya Colony except in this limited area of gallery forest along the lower Tana.

Coloration. Elliot (1912, **3**, p. 123) in his Review of the Primates, states that *tephrosceles*, the Ruwenzori representative of this form, differs, among other points, in not having any black on the head between the lateral tufts. The Ngatana skins, however, are also without black in this area, the entire crown being uniformly rufous.

Measurements. ♂. 600. 650. 168. 35 mm., ♀. 535. 605. 157. 35 mm. All the males have the same length from snout to anus.

Diet. The Wapokomo stated that these monkeys rarely descend to the ground and never molest their crops of corn and rice which abutted on the forests in which the animals were shot.

Enemies. Neither the Wapokomo nor other natives would touch the meat of these guerezas. Probably freedom from molestation accounts for the quiet way in which these monkeys sunned themselves when it was reasonably quiet.

ANOMALURIDAE

ANOMALURUS JACKSONI de Winton

Anomalurus jacksoni de Winton, 1898, Ann. Mag. Nat. Hist. (7), **1**, p. 251: Entebbe, Uganda.

3 ♀ (M. C. Z. 32335-7) Sipi, U. 18-26. xii. 33.

Distribution. It is not generally known that this scaly-tail occurs in Kenya Colony but a native-made skin was seen at Kaimosi, the animal having been killed locally.

Native names. *Chebkwowe* (Kisabei); *hapa* (Lugishu); *ekima* (Kitosh); *musiondet* (Kimasai); *lisimba* (Lutereki).

Coloration. Two of these flying squirrels are quite as described by de Winton, dark gray above, paler on the forehead, and blackish towards the edge of the membranes; a black muzzle and band through the eye, and a blackish spot about the base of the ear. The third has the ear spot and crown of the head rusty reddish, slightly mixed with grayish, while the hind feet, tibia, as well as the surrounding membrane, and a small area posterior to the forearm, are also rusty. A slight tinge of the same is present along the middle half of the tail, and shows faintly in its blackish terminal tuft.

Measurements. ♀. 380. 210. 62. 41 with a "wing" of 196 mm.

Diet. The stomachs of two were full of a mealy substance and free of parasites.

SCIURIDAE

HELIOSCIURUS RUFOBRACTHIUM NYANSAE (Neumann)

Sciurus nyansae Neumann, 1902, Sitz. Ges. naturf. Freunde Berlin, p. 56: Kwa Kitoto, near Kisumu, Kenya Colony.

9 ♂ 1 ♀ (M. C. Z. 30761-2, 30764-70) Sipi, U. 13-20. xii. 33.

♀ (M. C. Z. 30773) Butandiga, U. 15. i. 34.

3 ♂ 1 ♀ (M. C. Z. 30763, 30771-2) Elgoni, K. C. 25. i. & 5. ii. 34.

4 ♂ 3 ♀ (M. C. Z. 30760, 30774-8) Kaimosi, K. C. 19. ii.-7. iii. 34.

Distribution. Said by the natives to occur at Kaburomi (10,500 feet) in the alpine zone of Mount Elgon, but rare at this altitude. This squirrel, which is so common in the Elgon forests, like the local race of *Protoxerus* at Kaimosi, seems to represent a northeastward outpost of the species, which is characteristic of the rain forest areas.

Native names. *Kwereru* (Kisabei); *kau* (Lugishu); *emuma* (Kitosh); *gererut* (Kimasai).

Measurements. ♂. (Sipi) 255. 240. 50. 17 mm., ♀. (Sipi) 242. 240. 40. 17 mm.

Breeding. At Sipi, on December 12, 1933, a single large embryo was preserved from the uterus of one female, while two embryos were present in a second. At Kaimosi, on March 7, 1934, I heard a subdued cry of *kuck-kuck* in the undergrowth near my tent and surprised two young squirrels about the size of a little male (145. 140. 46. 14 mm.) shot on February 25, 1934.

The breeding season is evidently early in the year in this locality

for Heller collected very young squirrels at Kaimosi towards the end of January.

Parasites. Nematodes were numerous in the stomachs of Sipi and Kaimosi squirrels, those from the former locality have been identified by Dr. J. H. Sandground as *Protospiura muricola* and *Strongyluris* sp.

HELIOSCIURUS UNDULATUS SHINDI Heller

Heliosciurus rufobrachiatatus shindi Heller, 1914, Smithsonian Misc. Coll., **63**, No. 7, p. 7: Summit of Mount Umengo, Taita Hills, Kenya Colony.

2 ♂ (M. C. Z. 32333-4) Mt. Mbololo, K. C. 14 & 19. iv. 34.

Distribution. Mount Mbololo being just across the valley from Mount Umengo, these specimens are practically topotypes of the race described by Heller on the basis of a single squirrel. His notes are quoted by Hollister (1919, p. 12) to the effect that this form is confined to the remnant of forest capping the extreme summits of the Taita Hills where it is rare, for the type was the only individual seen during a fortnight's stay on Umengo.

Native names. Heller states that *shindi* is the Wataita name of this animal whereas my information is that *shindi* is Kisagalla, and *orosh* the Kitaita name.

Coloration. The two additional specimens listed above, bear out the characters originally claimed for this race, viz. that the underside differs from that of typical *undulatus* in its much paler buffy tint. The throat and upper chest as well as the lower abdomen are much mixed with whitish, forming conspicuous pale areas, as well. The squirrels of this group resemble *multicolor* in having a broad orange band to the hairs of the dorsum, concealed by the succeeding black band and pale tip.

Measurements. ♂. 238. 285. 53. 18 mm.

Habitat. Both were shot within thirty yards of the same spot at 4,800 feet on the very summit of Mount Mbololo, and were the only ones seen during a fortnight's camping on the summit.

HELIOSCIURUS MULTICOLOR ELEGANS Thomas

Heliosciurus multicolor elegans Thomas, 1909, Ann. Mag. Nat. Hist. (8), **4**, p. 103: Mount Elgon, Kenya Colony.

♂ ♀ (M. C. Z. 31282-3) Karita River camp, Karamojo, U. 9. xi. 33.

4 ♂ 1 ♀ (M. C. Z. 31277-80, 31285) Mount Debasien, U. 14. xi-1. xii. 33.

Distribution. This squirrel was not met with on Mount Elgon; it is

probably found on the eastern slopes where the dry conditions approximate more to those of Mount Debasien.

Native names. *Eles* (Karamojong).

Coloration. This is a pale squirrel with white underparts, and a pattern of dorsal hairs resembling that of *Heliosciurus undulatus* in having a blackish base, followed by a wide orange-rufous band, then a black band and a pale tip. The orange-rufous band is concealed by the terminal parts of the coat.

Measurements. ♂. 223. 224. 38. 14 mm., ♀. 215. 250. 46. 12 mm. Both from Mount Debasien, the Karita River squirrels being sub-adult.

Diet. The Karita River specimens betrayed their presence by the dropping of acorns as they fed in a big tree beneath which my tent was pitched.

Disease. The genital region of one male was diseased, characterized by a huge swelling which the native skinner reported as being full of aqueous matter.

Habitat. All the Debasien squirrels were shot in gallery forest along the Amaler River or adjacent dry watercourses above 5,000 feet.

PROTOXERUS STANGERI BEA Heller

Protoxerus stangeri bea Heller, 1912, Smithsonian Misc. Coll., 59, No. 16, p. 2: Lukosa River, Kakamega Forest, Kenya Colony.

9 ♂ 5 ♀ (M. C. Z. 30746-59) Kaimosi, K. C. 9. ii.-7. iii. 34.

Distribution. This fine series of topotypes was secured in the Kakamega Forest by the Lukosa River and neighborhood of Kaimosi. As mentioned by Hollister, the discovery of this race constituted an important eastward extension of the range of this western squirrel.

Native names. *Kisila* (Luragoli); *shiseera* (Lutereki).

Measurements. ♂. 320. 317. 67. 25 mm., ♀. 315. 310. 65. 22 mm.

Breeding. On February 12, 1934, a young ♂. 157. 133. 43. 12 mm. was brought in. It had a pure white tail, totally unlike the adults.

Diet. One male was shot as he descended a tree, head downwards, with a large apple-like fruit, measuring 50 mm. in diameter, in his mouth.

MYOXIDAE

CLAVIGLIS PARVUS PARVUS (True)

Eliomys parvus True, 1893, Proc. U. S. Nat. Mus., 16, p. 601: Tana River, between the coast and Hameye, Kenya Colony.

Graphiurus parvus parvus Hollister, 1919, U. S. Nat. Mus. Bull. 99, p. 154.

♂ (M. C. Z. 32066) Ngatana, K. C. 15. vi. 34.

Native name. *Neki* (Kipokomo).

Discussion. This solitary example of the dormice of this group is referred to True's species, of which it is a topotype, although it seems likely that it may prove to be conspecific with *microtis* when the inter-relationships of the dormice can be worked out more carefully.

Coloration. Its short gray fur, white hind feet and less gray under-side are distinguishing characters from the group to which *saturatus* belongs.

Measurements. ♂. 83. 75. 15. 12 mm.

Habitat. Captured in my tent which was pitched beneath a wild fig tree surrounded by grasslands and swamps, near Wema village.

CLAVIGLIS SATURATUS (Dollman)

Graphiurus microtis saturatus Dollman, 1910, Ann. Mag. Nat. Hist. (8), 5, p. 204: South face of Mount Elgon at 9,000 feet, Kenya Colony.

♀ (M. C. Z. 31589) Mt. Debasien, U. 21. xi. 33.

2 ♂ 12 ♀ 5 yng. (M. C. Z. 31571-88, 31597) Butandiga, U. 8-14. i. 34.

♂ (M. C. Z. 31598) Elgonyi, K. C. 5. ii. 34.

2 ♂ 6 ♀ (M. C. Z. 31590-6, 31599) Kaimosi, K. C. 19. ii.-5. iii. 34.

Distribution. The dormouse from Elgonyi is almost topotypic as it comes from the south face of Mount Elgon at 7,000 feet.

Native names. *Isene* (Lugishu and Kitosh); *kererut* (Kimasai); *kizuguzu* (Luragoli); *shitzigutzu* (Lutereki).

Coloration. In contrast to the series from Mount Elgon, which are unstained below, the specimen from Mount Debasien has the whole ventral side of the throat and upper chest, lips, lower cheeks and fore arms stained a brilliant rusty, probably from some food such as pollen on which it had been feeding.

There is a slight amount of variation in the color of the dorsum, some grayer and darker, some faintly more ochraceous, and a few with a decided brownish tinge, perhaps a result of fading. The dark bases of the belly hairs show through prominently. As usual, many exhibit broken tails with the terminal hairs of the stump white. This large series includes a number of small, youngish examples.

Measurements. ♂. (Kaimosi) 98. 80. 17. 13 mm., ♀. (Debasien) 105. 90. 16. 15 mm.

Breeding. At Butandiga, on January 14, 1934, a single very young dormouse (50. 30. 11. 5 mm.) was brought in, its tail being rat-like, not heavily furred like those of the adults. Four were taken from another nest by a native who did not bring them to me until the following day after two had died. An examination of their stomachs showed that they were still being suckled. The two live ones were hungry and twittering like small birds, warm cow's milk was offered them in the palm of one's hand and they commenced to lap almost immediately. This diet, however, even when diluted did not suit them too well for they developed digestive troubles and succumbed some three weeks later.

Diet. The natives claim that these dormice are very fond of bananas.

Enemies. It was also said that they were very abundant in the Maragoli country (Kaimosi and vicinity) but were being driven away or exterminated by the introduction of roof rats (*Rattus r. kijabius*).

Habitat. During the fortnight that I was at Elgonyi I constantly urged the natives to bring in dormice as I was only two thousand feet below the type locality. But beyond stating that they were familiar with it as a dweller in their bananas at the foot of the mountain, they failed to secure any.

My tent was pitched in a clearing of the forest about fifteen feet from the base of a giant, twisted, forest tree that reminded me of one at Madehani above Lake Nyasa. From that tree I had obtained a series of *Claviglis s. collaris* (Allen & Loveridge, 1933, p. 122) where they were associated with a tree rat (*Hylomyscus weileri*). For several nights after our arrival I visited this tree at Elgonyi with a flashlight but without result. I sent a native up to search for signs of rodents but he failed to find either tracks or nests. After we had been in camp a week we purchased a bunch of unripe bananas and hung them against the trunk of this tree to ripen.

The following day, my wife drew my attention to a couple of bananas that had been slightly eaten. After a careful examination I dismissed the idea of fruit bats being the culprits, then, discovering a dropping wedged between two of the bananas, postulated a dormouse as the robber. I removed the bunch to another place, nailed a rat trap to the branch where the bunch had hung and baited the trap with a fragment of banana. Next morning the bait was gone but the trap unsprung. The day after the bait was again taken and the trap sprung. The third morning furnished the same result as the second nor could I detect hairs upon the cloth which was wound round the wire of the trap to prevent injury to the hoped-for specimen.

An hour before sunset on the third day I was approaching the trap to reset it when I heard a rustle among the dry leaves among the buttress roots of the giant tree. Looking down, I saw the bright eyes of a rat (*Praomys t. jacksoni*) watching me, it was within eighteen inches of my feet and had doubtless just emerged from a cavity at the base of the tree into which it promptly disappeared. I removed the trap from above and set it at the entrance of the hole, then went to dinner. The meal over, I returned to remove a *Praomys* from the trap before resetting it. Five minutes later I heard a snap and going to the trap took out another *Praomys*. Having reset the trap, I put another down at a similar opening on the far side of the tree. I had not left ten minutes when both traps went off almost simultaneously. In one was a third *Praomys* which, like its predecessors, had been killed by a blow on the back of the neck. In the other was a live dormouse held by one foreleg.

CRICETIDAE

DIPODILLUS PUSILLUS (Peters)

Gerbillus pusillus Peters, 1878, Monatsb. Akad. Wiss. Berlin, p. 201: Ndi, Taita, Kenya Colony.

Dipodillus percivali Dollman, 1914, Ann. Mag. Nat. Hist. (8), 14, p. 488: Voi, Kenya Colony.

1 ♂ 12 ♀ (M. C. Z. 32088-91, 32094-7, 32100-4) Voi, K. C. 9. iv. 34.

2 ♂ 3 ♀ (M. C. Z. 32092-3, 32098-9, 32105) Mt. Mbololo. 23. iv. 34.

Distribution. The series from Voi are topotypes of *percivali* which, as previously supposed by Hollister (1919, p. 25), is synonymous with *pusillus* of Peters. The Mbololo series are almost topotypic of the latter.

Native names. *Monguru* (Kisagalla); corrupted to *mongulu* (Kitaita).

Measurements. ♂. (Voi) 98. 100. 20. 9 mm., ♀. (Mbololo) 85. 110. 18. 10 mm.

Breeding. About half the series of eighteen gerbils are immature.

Enemies. One was recovered from the stomach of a sand boa (*Eryx c. loveridgei*).

TATERA VICINA VICINA (Peters)

Gerbillus vicinus Peters, 1878, Monatsb. Akad. Wiss. Berlin, p. 200: Kitui, Ukamba, Kenya Colony.

Tatera mombasae Wroughton, 1906, Ann. Mag. Nat. Hist. (7), 17, p. 493: Takaungu, Kenya Colony.

♂ 2 ♀ (M. C. Z. 32116-7, 32119) Voi, K. C. 10. iv. 34.

♂ (M. C. Z. 32118) Mt. Mbololo, K. C. 28. iv. 34.

Native names. *Gue* (Kisagalla); *ngorobo* (Kitaita).

Discussion. The much more prominently tufted tail-tip and the slightly smaller size (hind foot 31-34 mm.) distinguish this gerbil from *T. nigricauda* which occurs in the same area.

Measurements. ♂. (Mbololo) 125. 170. 32. 18 mm., ♀. (Voi) 124. 110. 27. 22 mm.

TATERA NIGRICAUDA NIGRICAUDA (Peters)

Gerbillus nigricaudus Peters, 1878, Monatsb. Akad. Wiss. Berlin, p. 200: Ndi, Taita, Kenya Colony.

♀ (M. C. Z. 32182) Kibwezi, K. C. 27. iii. 34.

3 ♂ 1 ♀ (M. C. Z. 32113-4, 32180-1) Voi, K. C. 11. iv. 34.

♂ (M. C. Z. 32115) Peccatoni, K. C. 24. v. 34.

♀ (M. C. Z. 32179) Ngatana, K. C. 13. vi. 34.

3 ♂ (M. C. Z. 32120-1, 32178) Malindi, K. C. 29. vi. 34.

Native name. The Wapokomo only apply the Kiswahili *panya* to this gerbil; the Wasagalla and Wataita do not differentiate it from the last species.

Discussion. The adults agree in having the long tail black on its upper surface to the very tip, with only a slight admixture of paler buffy hairs towards the base. They differ from *vicina* in the much shorter hairs of the terminal tail tuft, and in the larger hind foot (36-43 mm.). The color of the face differs in being duller, a mixed grayish instead of clear bright buff in the paler areas. The character of the tail tuft in the young of both species is like that of the respective adults.

Measurements. ♂. (Voi) 160. 181. 34. 20 mm., ♀. (Ngatana) 160. 182. 40. 22 mm.

Breeding. Two of the Malindi series are juvenile, measuring 85. 101. 31. 15 mm.

Dict. The Kibwezi gerbil was trapped with cheese, all the others with bread.

TATERA NIGRITA Wroughton

Tatera nigrata Wroughton, 1906, Ann. Mag. Nat. Hist. (7), 17, p. 491: Masindi, Unyoro, Uganda.

♀ (M. C. Z. 31351) Kirui, K. C. 18. i. 34.

♀ (M. C. Z. 31352) Kaimosi, K. C. 9. iii. 34.

Distribution. These records constitute a slight eastward extension of the range which was formerly confined to Uganda.

Native names. *Oonga* (Lugishu); *muragutyet* (Kimasai); *emata* (Kitosh).

Discussion. These two specimens agree in being very much darker above than is usual in East African species of the genus *Tatera*. Their tails are dark above and buffy below, as described by Wroughton. The fore claws are notably long and stout, the skull with broader molars and larger bullae (11–11.5 mm. in length) as compared with those of *T. nigricauda* to which species they otherwise bear a slight resemblance. Although *nigrita* has been described as a small gerbil, our two examples are as large as *T. n. nigricauda*.

Measurements. ♀. (Kirui) 162. 160. 22. 23 mm.

RHIZOMYIDAE

TACHYORYCTES RUDDI Thomas

Tachyoryctes ruddi Thomas, 1909, Ann. Mag. Nat. Hist. (8), 4, p. 546: Kirui, Mount Elgon, Kenya Colony.

8 ♂ 5 ♀ (M. C. Z. 30779–83, 30785–92) Sipi, U. 12–18. xii. 33.

2 ♂ (M. C. Z. 30793, 30801) Kaburomi, U. 28. xii. 33.

1 ♂ (M. C. Z. 30799) Bukori, Kitosh, K. C. 18. i. 34.

4 ♂ 3 ♀ (M. C. Z. 30784, 30794–8, 30800) Kirui, K. C. 20. i. 34.

Native names. *Bumoongwet* (Kisabei); *unungwet* (Kimasai); *ifuko* (Lugishu and Kitosh).

Coloration. One young one is grayish, another black as were all the young ones rejected by Loveridge. This is the normal color of the young according to Hollister (1919, p. 41) as distinct from the brown pelage of the adults, though one adult has remained black.

Measurements. ♂. (Sipi) 215. 64. 28. 10 mm., ♀. (Kirui) 210. 65. 30. 8 mm.

Enemies. The Wanderobo women are expert in handling these big mole rats for they are eaten as a matter of course. They can be picked up by the tail quite safely though with the accompaniment of shrill squeaks. They bite fiercely with their huge teeth at a stick or other object with which they may be restrained.

MURIDAE

DENDROMUS INSIGNIS INSIGNIS Thomas

Dendromus insignis Thomas, 1903, Ann. Mag. Nat. Hist. (7), 12, p. 341: Nandi, Kenya Colony.

7 ♂ 4 ♀ (M. C. Z. 31211-2, 31214-22) Sipi, U. 13-22. xii. 33.

♀ (M. C. Z. 31208) Butandiga, U. 8. i. 34.

♂ ♀ (M. C. Z. 31174, 31176) Kirui, K. C. 25. i. & 9. ii. 34.

9 ♂ 5 ♀ (M. C. Z. 31181-9, 31193, 31195, 31197-8, 31203) Kaimosi, K. C. 14-20. ii. 34.

Distribution. Hollister (1919, p. 48) has already recorded this very common species of tree mouse from Kaimosi. Though given rank as a distinct species, it seems likely that this striped-back group is more closely related to the South African form.

Native names. *Chapchorogos* (Kisabei); *mandiosi* (Lugishu); *chep-toragopsi* (Kimasai); *mulubendi* (Kitosh); *kisie* (Luragoli); *isorodoni* (Lutereki).

Measurements. ♂. (Sipi) 90. 102. 21. 15 mm., ♀. (Sipi) 90. 104. 22. 15 mm.

Enemies. One was recovered from the stomach of a tree viper (*Atheris squamigera*) at Kaimosi.

DENDROMUS WHYTEI PALLESCENS Osgood

Dendromus whytei pallescens Osgood, 1910, Publ. Field Mus. Nat. Hist., Zoöl. Series, 10, No. 2, p. 7: Ulukanya Hills, Kenya Colony.

♂ ♀ (M. C. Z. 31223-4) Sipi, U. 14 & 22. xii. 33.

♂ 2 ♀ (M. C. Z. 31210, 31230, 31232) Butandiga, U. 8-14. i. 34.

4 + 1 ♀ (M. C. Z. 31175, 31180, 31225-7) Kirui, K. C. 6-9. ii. 34.

♂ 2 ♀ (M. C. Z. 31196, 31228-9) Kaimosi, K. C. 10 & 20. ii. 34.

Distribution. This is a much smaller species than *D. i. insignis* but occurs alongside it as do also the following species.

Measurements. ♂. (Kaimosi) 77. 90. 18. 12 mm., ♀. (Butandiga) 76. 86. 18. 13 mm.

DENDROMUS RUDDI Wroughton

Dendromus ruddi Wroughton, 1910, Ann. Mag. Nat. Hist. (8), 5, p. 275: Malakisi, Mount Elgon, Kenya Colony.

2 ♂ 3 ♀ (M. C. Z. 31231, 31234-7) Butandiga, U. 8-14. i. 34.

Type locality. The village of Malakisi is not on Mount Elgon but lies at the southern foot to the west of Bukori. I passed through it

when motoring from Mbale to Bukori as it is on the mainroad skirting the mountain.

Native name. *Tsuru* (Lugishu). The Bagishu distinguish between this unstriped species and the others which display a dorsal line.

Measurements. ♂. 68. 90. 16. 12 mm., ♀. 60. 70. 15. 17 mm.

Enemies. On January 13, three very young unstriped tree mice and seven adult striped *D. acraeus* were brought in alive. As we already had as much skinning to accomplish as we could handle, I put these mice into a large can with quantities of soft grass, bread, and cheese. Later in the evening I heard squeaks proceeding from the tin and on examining them found that all the three young had been killed, and partly devoured, by the adults.

DENDROMUS ACRAEUS Wroughton

Dendromus acraeus Wroughton, 1909, Ann. Mag. Nat. Hist. (8), 4, p. 541: Kirui, Mount Elgon, Kenya Colony.

1 + 5 ♂ 2 ♀ (M. C. Z. 31204-7, 31209, 31233) Butandiga, U. 8-14. i. 34.

3 young (M. C. Z. 31177-9) Kirui, K. C. 9. ii. 34.

5 ♂ 2 ♀ (M. C. Z. 31190-2, 31194, 31199-202) Kaimosi, K. C. 14-20. ii. 34.

Distribution. This species of small size and with an obsolete black median line, seems to be about as common as *D. i. insignis* and occurs in the same localities.

Measurements. ♂. (Kaimosi) 68. 80. 16. 10 mm., ♀. (Kaimosi) 73. 105. 18. 12 mm.

ZELOTOMYS HILDEGARDEAE VINACEUS Heller

Zelotomys hildegardae (sic) *vinaceus* Heller, 1912, Smithsonian Misc. Coll., 59, No. 16, p. 10: Mount Mbololo, Taita Hills, at 3,000 feet, Kenya Colony (amended, see below).

♂ ♀ (M. C. Z. 32086-7) Mt. Mbololo at 3,000 ft., K. C. 24-25. iv. 34.

Type locality. In the original description, this reads: "Ndi, Mount Mbololo." As Ndi is a small railway station on the plains some distance from the foot of the mountain, and an unlikely spot in which to find a rain-forest species, Mr. Heller was communicated with and confirms the supposition that "Mount Mbololo, near Ndi" was intended, as the mountain was so little known at that time.

Discussion. These two topotypes agree precisely with the original description. Their close color resemblance to the local race of *Mastomys* has been remarked upon by Heller and Thomas though the

former states that in life *vinaceus* is distinguishable by the pinkish tint of the paler parts of the tail.

Osgood (1910, p. 7), when erecting the genus, gave the mammary formula as $2 - 2 = 8$, but Thomas (1915, p. 481) found three pairs of pectorals in Congo specimens making $3 - 2 = 10$. One of the above specimens is an adult female with well-developed mammae of which we are able to discover but two pectoral pairs, so that there is probably some variation in this respect.

Nothing was learned of the habits of this interesting animal, which is still rare in collections. The slightly proclivous upper incisors, and rather shortened skull, may indicate that it is somewhat of a burrower.

Measurements. ♂. 130. 105. 23. 16 mm., ♀. 130. 108. 22. 15 mm.

THAMNOMYS SURDASTER POLIONOPS Osgood

Thamnomys surdaster polionops Osgood, 1910, Publ. Field Mus. Nat. Hist., Zool. Series, 10, No. 2, p. 8: Ulukeny Hills, Kenya Colony.

♂ (M. C. Z. 32171) Mt. Mbololo, K. C. 17. iv. 34.

Coloration. This single specimen is a decided shade darker gray, and a trifle less deep in its rusty ochraceous back, than a series from Tanganyika Territory considered as representative of typical *surdaster*. Hollister (1919, p. 58), commenting on a series from Mount Mbololo, regards them as "somewhat intermediate between typical *polionops* and the Kilimanjaro form" but "clearly nearest" to the former.

Measurements. ♂. 122. 170. 26. 15 mm.

Diet. Trapped with bread as a bait at 4,800 feet.

THAMNOMYS SURDASTER ELGONIS Thomas

Thamnomys surdaster elgonis Thomas, 1910, Ann. Mag. Nat. Hist. (8), 5, p. 282: Malakisi, south foot of Mount Elgon, Kenya Colony.

Thamnomys surdaster discolor Thomas, 1910, Ann. Mag. Nat. Hist. (8), 5, p. 283: Kakamega Forest, Kenya Colony.

Thamnomys surdaster insignis Dollman, 1911, Ann. Mag. Nat. Hist. (8), 7, p. 528: south face of Mount Elgon at 9,000 feet, Kenya Colony.

2 ♀ (M. C. Z. 31384-5) Mt. Debasien, U. 22-23. xi. 33.

♂ juv. (M. C. Z. 31213) Sipi, Mt. Elgon, U. 20. xii. 33.

♂ (M. C. Z. 31386) Butandiga, U. 10. i. 34.

♀ (M. C. Z. 31387) Kirui, K. C. 28. i. 34.

♀ (M. C. Z. 31238) Elgonyi, K. C. 5. ii. 34.

♂ ♀ (M. C. Z. 31382-3) Kaimosi, K. C. 19. ii. & 7. iii. 34.

Distribution. The Kirui specimen is almost topotypic of *elgonis*, the Elgonyi of *insignis*, while the pair from Kaimosi are topotypes of *discolor*. We fail to see any reasons, taxonomic or geographic, for keeping them distinct.

Native names. *Araraget* (Kisabei); *sungama* (Lugishu and Kitosh).

Discussion. This thicket mouse of the moist, forested Elgon-Kakamega region is distinguished by the contrasted dark central marking on the metatarsals. In other respects it is very similar to typical *surdaster*, of which it should undoubtedly be considered a local race.

Coloration. The two mice from Mount Debasien, as well as one from Mount Kenya and another from Nyeri in the Museum collection, differ from the rest of the series in wholly lacking any trace of the ochraceous buffy line bounding the white of the underparts from cheeks to ankle. Instead the line of demarcation is abrupt and the sides of the body buffy gray, backs of the feet pale ochraceous buff, and head and shoulders slightly grayer than the back. In skull characters and other respects, however, they show no significant differences from the rest of the series.

Measurements. ♂. (Kirui) 112. 161. 22. 16 mm., ♀. (Butandiga) 125. 172. 23. 17 mm.

Breeding. The very young male (72. 90. 17. 13 mm.) was brought in alive at Sipi on December 20, 1934.

Dict. The Elgonyi mouse was trapped with unripe banana as bait.

OENOMYS BACCHANTE EDITUS Thomas & Wroughton

Oenomys bacchante editus Thomas & Wroughton, 1910, Trans. Zoöl. Soc. London, **19**, p. 509: Mubuku Valley, Mount Ruwenzori, Uganda.

7 ♂ 4 ♀ (M. C. Z. 31626-34, 31650-1) Sipi, U. 13-20. xii. 33.

2 ♂ 2 ♀ (M. C. Z. 31635-8) Butandiga, U. 8-10. i. 34.

5 ♂ 5 ♀ (M. C. Z. 31639-49) Kaimosi, K. C. 10-19. ii. 34.

Native names. *Bunwe* (Lugishu); *indioro* (Luragoli); *nangeti* (Lute-reki).

Coloration. This large series from Mount Elgon and Kakamega is referred to *editus*, following Hollister's (1919, p. 64) determination of those from the latter region in the United States National Museum. As was the case with his series, there is much individual variation in the depth and extent of the rufous areas. Two of the Butandiga rats have the outer and inner sides of the ears deep bright rufous, others from the same locality are dark-eared. An extreme variant from Mount Elgon has the whole of the posterior half of the back tinged with rufous.

Measurements. ♂. (Kaimosi) 180. 200. 30. 20 mm., ♀. (Kaimosi) 175. 185. 30. 20 mm.

Enemies. At Kaimosi, where rusty-nosed rats were very abundant, they were recovered from the stomachs of the following animals and reptiles: Civet (*Civettictis c. schwarzii*), genet (*Genetta s. stuhlmanni*), tree civet (*Nandinia b. arborea*), mongoose (*Herpestes i. funestus*), mamba (*Dendraspis jamesoni*) and nose-horned viper (*Bitis nasicornis*).

RATTUS RATTUS KIJABIUS (Allen)

Mus kijabius J. A. Allen, 1909, Bull. Amer. Mus. Nat. Hist., **36**, p. 169: Kijabe, Kenya Colony.

- ♂ juv. (M. C. Z. 31336) Mt. Debasien, U. 18. xi. 33.
 2 ♂ 2 ♀ (M. C. Z. 31332-5) Sipi, U. 12. xii. 33.
 ♂ 2 ♀ (M. C. Z. 31337-9) Elgonyi, K. C. 24. i. 34.
 ♂ (M. C. Z. 32177) Golbanti, K. C. 23. vi. 34.

Distribution. As Hollister (1919, p. 68) has pointed out, this house rat differs from the race inhabiting the southern United States and the Mediterranean region. It may prove to be a native variety or possibly have been introduced.

Native names. *Miri* (Karamojong); *mabaja* (Lugishu); *gummabat* (Kisabei); *mabaget* (Kimasai); *kimbeba* (Kitosh); *lijunga* (Luragoli); *lichungu* (Lutereki); *ndebe* (Kitaita); *panya* (Kipokomo and Kiswahili).

Coloration. Typically this is a dark, slaty-bellied rat with a dark gray back, not much mixed with brown. The male from Golbanti, Tana River, however, is pure white below to the roots of the hairs. In this respect it corresponds to the rural form of house rats in parts of Asia where the slaty-bellied forms are usually found about towns.

Measurements. ♂. (Sipi) 188. 206. 31. 23 mm., ♀. (Sipi) 180. 192. 30. 22 mm.

Breeding. This large Sipi female held nine big embryos on December 12, 1933.

Dict. The Debasien rat was trapped with meat bait in the tent after it had disturbed me several times by knocking things over. According to the Maragoli, when these rats arrived in the Kakamega country they drove out the dormice (*Claviglis saturatus*) which were formerly very common there.

Enemies. A very big rat, measuring seven and a half inches from snout to anus, was recovered from the stomach of a thirty-two inch House Snake (*Boaedon lineatus*) at Kaimosi, a smaller rat was taken

from a second House Snake in the same locality and a big one from a Puff Adder (*Bitis arietans*) at Bukori.

Habitat. In corroboration of the authors' views given above, it is interesting to note that the white-bellied rat was taken in the rice fields situated some distance from the village of Golbanti.

AETHOMYS KAISERI MEDICATUS (Wroughton)

Mus medicatus Wroughton, 1909, Ann. Mag. Nat. Hist. (8), 4, p. 540: Mumias, Kenya Colony.

1 + ♂ ♀ (M. C. Z. 31340-1, 31353) Mt. Debasien, U. 14-29. xi. 33.

Distribution. Hollister (1919, p. 71) has recorded many examples of this subspecies from Uganda as well as from the Kakamega region.

Native name. *Lonang* (Karamojong).

Coloration. Two of the series are immature, the adult female agrees in its buffy sides and mixed buffy-and-black middorsal area with skins of this race from the Guaso Nyiro country.

Measurements. ♂ imm. 125. 121. 21. 19 mm., ♀. 160. 130+. 30. 21 mm.

Dict. The male was taken in a trap baited with mealie porridge.

PRAOMYS TULLBERGI JACKSONI (de Winton)

Mus jacksoni de Winton, 1897, Ann. Mag. Nat. Hist. (6), 20, p. 318: Entebbe, Uganda.

5 ♂ 5 ♀ (M. C. Z. 31389-93, 31415, 31476-9) Sipi, U. 14-20. xii. 33.

♀ (M. C. Z. 31394) Butandiga, U. 12. i. 34.

2 ♂ 2 ♀ (M. C. Z. 31396-9) Elgoni, K. C. 5-7. ii. 34.

♂ (M. C. Z. 31388) Kirui, K. C. 25. i. 34.

♀ (M. C. Z. 31395) Kaimosi, K. C. 25. ii. 34.

Native names. *Morong* (Kisabei); *changwaset* (Kimasai); *imbagula* (Lugishu); *isakula* (Lutereki).

Coloration. There is more or less individual variation in the amount of russet in the pelage, which seems to increase with age till in some specimens it is nearly clear rufous about the base of the tail.

Measurements. ♂. 130. 145. 25. 21 mm., ♀. 130. 143. 25. 20 mm. Both these rats were from Elgoni; at Sipi they averaged much smaller, viz. ♂. 120. 126. 24. 20 mm., ♀. 122. 135. 25. 18 mm., even so this male was much larger than the general run of males taken at Sipi.

Dict. Trapped with banana at Elgoni as related under *Claviglis saturatus*; with a cheese bait in my tent at Kaimosi.

Enemies. At Kaimosi one was recovered from the stomach of a mongoose (*Herpestes i. funestus*), another from a tree viper (*Atheris squamigera*) on February 24, 1934.

Habitat. So abundant was this species in the forest surrounding the clearing where I camped above Sipi, that we took nine in ten traps put out the first night of trapping.

PRAOMYS TAITAE (Heller)

Epimys taitae Heller, 1912, Smithsonian Misc. Coll., **59**, No. 16, p. 9: Mount Mbololo, Taita Hills, Kenya Colony.

♂ 2 ♀ (M. C. Z. 32131, 32124-5) Mt. Mbololo, K. C. 18. iv. 34.

Distribution. As this rat has only been taken from the Taita Hills it may have rather a restricted range.

Discussion. This species seems to be quite distinct from the larger *P. tullbergi* and its races. *P. taitae* has a smaller body and feet and a much shorter skull in which the line of supraorbital beading is present as a barely indicated ridge.

Measurements. ♂ juv. 62. 48. 17. 10 mm., ♀ ad. 95. 120. 22. 18 mm.

Breeding. This female and her two young were dug from among loose mold and dead leaves which had drifted between the huge buttress roots of a giant tree at the lower edge of the forest at about 4,000 feet.

MASTOMYS COUCHA TINCTUS (Hollister)

Rattus coucha tinctus Hollister, 1918, Smithsonian Misc. Coll., **66**, No. 10, p. 1: Kaimosi, Kenya Colony.

3 ♂ 7 ♀ (M. C. Z. 31400-9) Mt. Debasien, U. 20-29. xi. 33.

♂ juv. (M. C. Z. 31780) Greeki River, U. 7. xii. 33.

♀ (M. C. Z. 31414) Kirui, K. C. 1. ii. 34.

4 ♀ (M. C. Z. 31410-3) Kaimosi, K. C. 20. ii-8. iii. 34.

Native names. *Loyokomur* (Karamojong); *ikaria* (Lugishu).

Coloration. Hollister (1919, p. 89) defines this as a large race of dark tint whose underparts are only slightly paler than its sides. Most of the series listed above are not fully adult but the hair of their bellies, though with the usual gray bases, is rather contrastingly white-tipped. The rats forming the Mount Debasien series are also mostly subadult, but scarcely differ from the Kaimosi topotypes, though possibly a very little paler grayish above.

Measurements. ♂. (Debasien) 130. 108. 23. 19 mm., ♀. (Kaimosi) 130. 112. 22. 18 mm.

Breeding. The male from Greeki River, December 7, 1933, was one of four young (83. 80. 22. 17 mm.) trapped the same day but damaged by ants.

Enemies. One was recovered from the stomach of a tree viper (*Atheris squamigera*) at Kaimosi on February 21, 1934.

MASTOMYS COUCHA HILDEBRANDTHI (Peters)

Mus hildebrandtii Peters, 1878, Monatsb. Akad. Wiss. Berlin, p. 200: Ndi, Taita, Kenya Colony.

♂ (M. C. Z. 32189) Kibwezi, K. C. 27. iii. 34.

♂ ♂ (M. C. Z. 32130, 32183) Peccatoni, K. C. 25. v. 34.

♂ 5 ♀ (M. C. Z. 32126-28, 32184-5, 32187) Ngatana, K. C. 12-19. vi. 34.

♀ ♀ (M. C. Z. 32186, 32129) Golbanti, K. C. 23. vi. 34.

♂ (M. C. Z. 32189) Malindi, K. C. 30. vi. 34.

Distribution. The specimens from the Tana region are probably best referred to *hildebrandtii*. The immatures are less blue gray than are rats from near Mombasa which represent the race *durumae*.

Native name. *Panya* (Kipokomo, who do not appear to have specific names for rodents).

Measurements. ♂. (Malindi) 155. 182. 31. 21 mm., ♀. (Ngatana) 138. 122. 22. 17 mm.

Breeding. At Golbanti, June 23, 1934, a female, which had sixteen breasts in milk, together with her thirteen young (68. 60. 19. 13 mm.) was dug from a nest of grass situated about a foot beneath the surface, in clay, at the edge of a rice field. The sedges, which formerly covered the site of the nest, had been cut down and spread over the ground like a carpet. In addition to two entrances to the nest there were a number of blind alleys, some of which were probably for drainage purposes.

Enemies. Two in the stomach of a serval (*Felis c. hindei*) near Golbanti.

Parasites. Mites were numerous on the mother.

LEGGADA TRITON TRITON Thomas

Leggada triton triton Thomas, 1909, Ann. Mag. Nat. Hist. (8), 4, p. 548: Kirui, Mount Elgon, Kenya Colony.

3 ♂ 11 ♀ 5 young (M. C. Z. 31482, 31498, 31530-6, 31552-61)
Sipi, U. 14-22. xii. 33.

3 ♂ 10 ♀ (M. C. Z. 31537-47, 31550-1) Butandiga, U. 8-13. i. 34.
1 (M. C. Z. 31515) Kirui, K. C. 6. ii. 34.

7 ♂ 4 ♀ (M. C. Z. 31548-9, 31562-70) Kaimosi, K. C. 9-21. ii. 34.

Distribution. Occurring alongside *L. g. grata* in all these localities, where both species are abundant. The topotype is without sex or measurements as it was obtained by a skinner, who could neither read nor write, who was sent to Kirui to ask for it specifically by its native name.

Native names. *Chepchom* (Kisabei); *mbuku* (Lugishu); *kivudu* (Luragoli); *shivudu* (Lutereki).

Measurements. ♂. (Kaimosi) 85. 54. 15. 12 mm., ♀. (Kaimosi) 85. 55. 14. 12 mm.

Breeding. At Sipi, on December 20, 1933, three nestling young were brought in, on the 22nd another.

Enemies. At Butandiga a female had a truncated tail, healed, though half was missing. One of these pygmy mice was recovered from the stomach of a house snake (*Boaedon lineatus*).

LEGGADA BELLA BELLA Thomas

Leggada bella Thomas, 1910, Ann. Mag. Nat. Hist. (8), 5, p. 87: Machakos, Kenya Colony.

3 (M. C. Z. 31512-4) Kirui, K. C. 6. ii. 34.

Distribution. This white-bellied pygmy mouse was apparently far less common in the Elgon region than the other two species, *triton* and *grata*. These three were obtained by Loveridge's skinner under the conditions mentioned above.

LEGGADA BELLA VICINA Thomas

Leggada bella vicina Thomas, 1910, Ann. Mag. Nat. Hist. (8), 5, p. 88: Takungu, near Mombasa, Kenya Colony.

♂ ♀ (M. C. Z. 32190-1) Kitau, Manda Id., K. C. 16 & 18. v. 34.

Distribution. Said to occur in houses at Lamu, Lamu Island, though Loveridge failed to obtain any during the week that he was there.

Measurements. ♂. 57. 40. 11. 8 mm., ♀. 54. 48. 11. 10 mm.

Habitat. Captured in a ruined hut.

LEGGADA GRATA GRATA Thomas

Leggada grata Thomas, 1909, Ann. Mag. Nat. Hist. (8), 4, p. 549: Mubuku Valley, Mount Ruwenzori, Uganda.

5 ♂ 9 ♀ 3 young (M. C. Z. 31481, 31483-97, 32192) Sipi, U. 19-22. xii. 33.

5 ♂ 2 ♀ (M. C. Z. 31499-505) Butandiga, U. 8. i. 34.

4 + 2 ♀ (M. C. Z. 31506-511) Kirui, K. C. 1-6. ii. 34.

♀ (M. C. Z. 31517) Elgonyi, K. C. 4. ii. 34.

2 ♂ 10 ♀ (M. C. Z. 31518-29) Kaimosi, K. C. 9-20. ii. 34.

Native names. *Limwani* (Luragoli); *sinamutali* (Lutereki).

Coloration. This is a small grayish species with a buffy line separating the dorsal coloring from the white of the belly.

Measurements. ♂. (Butandiga) 70. 55. 13. 10 mm., ♀. (Sipi) 72. 54. 12. 10 mm.

Breeding. At Butandiga, on January 8, 1934, a female, measuring 62. 52. 13. 10 mm., held three fetuses, measuring ♀. 41. 16. 8. and ear ? mm.

Enemies. At Kaimosi one of these pygmy mice was recovered from the stomach of an European Kestrel (*Falco t. tinnunculus*), two from House Snakes (*Boaedon lineatus*) and one from a tree viper (*Atheris squamigera*).

A Sipi male had no external trace of a right hind limb though within the apparently uninjured skin it was present to the knee; the condition would appear therefore to have been congenital rather than resulting from an attack. Despite this handicap the little animal was in good condition. Living must be particularly favourable for this species at Sipi, despite the great variety of larger rodents occurring there, for natives brought in twice the number preserved during the first week of my stay.

CRICETOMYS GAMBIANUS ELGONIS Thomas

Cricetomys gambianus elgonis Thomas, 1910, Ann. Mag. Nat. Hist. (8), 5, p. 198: South face of Mount Elgon at 10,000 feet, Kenya Colony.

2 ♂ 1 ♀ (M. C. Z. 32219-21) Sipi, U. 18-22. xii. 33.

1 ♂ 1 ♀ (M. C. Z. 32222-3) Kirui, K. C. 25. i. 34.

6 ♂ 2 ♀ (M. C. Z. 32212-8, 32224) Elgonyi, K. C. 28. i-3. ii. 34.

6 ♂ 4 ♀ (M. C. Z. 32225-32, 32261-2) Kaimosi, K. C. 14-21. ii. 34.

Distribution. I was also shown one at Kaburomi, 10,500 feet, in the alpine zone, which rat was said to have been killed locally. The fact that it was decomposed, however, raises the possibility that it had been brought up the mountain from Sipi.

Native names. *Keraing* (Kisabei); *livunzi* (Lugishu); *evunge* (Kitosh); *unget* (Kimasai); *kikomi* (Luragoli); *shekome* (Lutereki).

Measurements. ♂. (Kaimosi) 400. 440. 70. 46 mm., ♀. (Kirui) 380. 405. 67. 45 mm.

Breeding. At Kaimosi, on February 14, 1934, an embryo measuring 100. 35. 19. 12 mm., was preserved. The following day a native brought in two naked nestlings of which the male measured 115. 55. 22. 10 mm.

Diet. The Bagishu aver that the giant rat only eats grass. I checked and rechecked this statement as it is in direct contradiction to what the Wakami told me respecting the race (*C. g. osgoodi*) inhabiting the Uluguru Mountains (cf. Allen & Loveridge, 1927, p. 436).

Parasites. Two species of orthopteran parasites (*Hemimerus han-seni* & *H. talpoides*) were collected in their fur at Sipi, the former only at Kirui and Kaimosi. The rats were dirty at Sipi but in fine clean condition at Kaimosi despite the numerous *Hemimerus*.

Enemies. The bodies of these giant rats were esteemed a delicacy and greatly in demand by the Wasabei, Bagishu, Elgon Masai, and Watereki all of whom trap them with deadfalls as a regular thing. One frequently met with the traps in the forest.

Folklore. The Maragoli say that when a male is killed all the females in the vicinity will die.

LOPHUROMYS AQUILUS AQUILUS (True)

Mus aquilus True, 1892, Proc. U. S. Nat. Mus., **15**, p. 460: Mount Kilimanjaro, Tanganyika Territory.

Lophuromys rubecula Dollman, 1909, Ann. Mag. Nat. Hist. (8), **4**, p. 551: Elgonyi, Mount Elgon, Kenya Colony.

16 (M. C. Z. 31447-62) Sipi, U. 12-13. xii. 33.

♂ 4 ♀ (M. C. Z. 31441-5) Butandiga, U. 8-13. i. 34.

♀ (M. C. Z. 31473) Goletatomi, K. C. 31. i. 34.

3 ♂ 6 ♀ (M. C. Z. 31464-72) Kaimosi, K. C. 10-19. ii. 34.

Distribution. This harsh-furred mouse also occurs in the alpine zone at Kaburomi, 10,500 feet, where I rejected a damaged specimen. The species did not occur at Elgonyi where I was camped so that it appears probable that Kemp obtained the type of *rubecula* rather higher than my camp. I sent natives up a day's march above Elgonyi and they secured one at a place they called Goletatomi, which is topotypic of *rubecula*.

Native names. *Jamasiku* (Kisabei); *siku* (Lugishu); *chemasoget* (Kimasai); *lidulu* (Luragoli); *liguve* (Lutereki).

Coloration. The wide individual differences in intensity of coloring on the underside, as well as those due to season, nullify any attempt to break up this species into races on such grounds since intergradation occurs between extreme types. The extremes in the case of the ventral surface are a pinkish buff on the one hand and a bright vinaceous on the other.

We therefore concur with Hollister (1919, p. 110) that there are

insufficient grounds for considering *rubecula* of Mount Elgon as racially distinct from *aquilus* of Mount Kilimanjaro.

Measurements. ♂. (Kaimosi) 125. 75. 20. 16 mm., ♀. (Kaimosi) 143. 75. 21. 18 mm.

Enemies. A mouse, apparently referable to this species, was found in the stomach of a nose-horned viper (*Bitis nasicornis*).

LOPHUROMYS SIKAPUSI ANSORGEI de Winton

Lophuromys ansorgei de Winton, 1896, Proc. Zoöl. Soc. London, p. 607: Mumias, Kenya Colony.

♂ ♂ (M. C. Z. 31446, 31463) Sipi, U. 12-13. xii. 33.

Discussion. Judging from the fact that only two of these mice were obtained at Sipi, it would appear that it is much less common there, or has a more restricted habitat, than *L. a. aquilus*. There can be little doubt that this is an eastern representative of *L. sikapusi* of the clearings and forest edges of West Africa. We are therefore regarding its status as that of a subspecies.

Coloration. As compared with *L. a. aquilus*, the pelage of *ansorgei* is of more even coloring, a paler olive brown and lacking the minute ticking while the belly is of a clearer chestnut tint.

Measurement. ♂. 101. 54. 20. 16 mm.

SACCOSTOMUS CRICETULUS sp. nov.

Type. Museum of Comparative Zoölogy, No. 31, 475. A subadult male, skin and skull, from the south bank of Greeki River, Sabei district, due north of Mount Elgon, Uganda, collected by Arthur Loveridge, December 5, 1933.

Description. In color this is a much darker gray than neighboring members of the genus, with almost none of the buffy tints of back and sides. Dorsal surface of the body from the muzzle to the root of the tail, a uniform "deep mouse gray" to "dusky drab" of Ridgway, becoming faintly tinged along the sides and cheeks with "pale ochraceous buff." The individual hairs of the back are of a "deep neutral gray" basally, this color gradually passing into a narrow subterminal band of very pale buffy (under a lens appearing soiled whitish), succeeded by a black tip. The ears on both inner and outer surfaces are a uniform dark blackish brown, slightly contrasting with the surrounding dark gray of the head, and conspicuously edged with clear white. Dorsal surface of the tail like the back, becoming slightly paler below with the admixture of short whitish hairs among the

black. Backs of the hands and feet white as far as the wrists and ankles. Below, the hair of the chin is whitish to the roots; elsewhere that of the entire under surface of the body, and of the legs to the wrists and ankles is "deep neutral gray" at base, tipped with whitish, the gray bases everywhere showing through conspicuously, giving an effect of dark grayish tinted with bluish.

The skull does not differ noticeably from that of *Saccostomus isiolae* Heller, its eastern neighbor of the dry Guaso Nyiro country. The nasals equal or minutely exceed the posterior extension of the premaxillae as in the latter, and in the coastal *mearnsi* Heller (type from Changamwe, Kenya Colony), instead of conspicuously exceeding them as in *umbriventer* Miller of the Sotik region to the southward. Of these closely related forms, the molar teeth are smallest and the molar rows nearly parallel in the last-named but in the others and in *crictulus* the teeth are slightly heavier, while the divergence of the rows is most noticeable in the new animal. The supraorbital ridges are most prominent in *umbriventer*, less so in the others. The posterior palatal pits are of about the same size in all, except that in the type specimen of *mearnsi* they are unusually large.

Measurements. In external measurements this pouched mouse does not apparently differ from the neighboring forms. The collector's measurements are as follows, those of the male type (No. 31475) preceding those of the female paratype (No. 31474):—head and body, 133, 133 mm.; tail, 50, 55 mm.; hind foot, 20, 22 mm.; ear 20, 21 mm.

The skull of the type and that of the paratype are slightly damaged at the posterior end, but that of the former shows the following:—greatest length, 30 mm.; palatal length, 18.7; zygomatic width, 16.6; width of brain case above squamosal roots, 13.7; interorbital width, 4.5; length of nasals, 13.0; upper molar row, 6.7; width across molar rows anteriorly, 7.7; same posteriorly, 6.5; lower molar row, 6.6.

Remarks. The trapping of these two specimens extends the known range of the genus slightly to the northwestward. In their uniformly dark gray coloring and conspicuous white edges of the ears they differ strikingly from the neighboring forms of the genus, while the shortened tail and white feet further combine to give them a close external likeness to the larger Asiatic species of *Cricetulus*, which has suggested the specific name. They were captured in the usual type of habitat for the genus, namely open grass- and bush-covered country, and in this case near the banks of a river.

Through the kindness of Mr. Gerrit S. Miller, Jr., and Dr. Reming-

ton Kellogg, of the U. S. National Museum, we have had for comparison the type and a topotype of the form *mearnsi* Heller and most of the original series of *umbriventer* Miller, which, with a series of topotypical *isiolae* Heller from Guaso Nyiro country, have served as a basis for comparison. These three were described as separate species, but externally are all practically identical and are without doubt very closely related. In cranial characters, however, *umbriventer* (which seems to be hardly, if any, darker underneath than the two others) is perhaps distinguishable on the basis of its slightly weaker molar teeth and the nearly parallel alignment of the molar rows, as well as by the relatively longer nasals, exceeding the premaxillaries posteriorly, and the narrower interorbital space with somewhat more prominent supraorbital ridges. These characters are at best of no more than subspecific value, and all three, if recognizable at all, are subspecifically related. Hollister (1919, p. 114) in reviewing the East African forms has already suggested this, but did not attempt to say of what species they should be considered races.

The South African *S. mashonae* is said to be at once distinguishable by the well-developed antero-external cusp of the second upper molar, which in these more northern forms is extremely small; moreover, *S. campestris*, of which these might be thought races, is at once distinguished by the pure white belly, the hairs without dark bases. In the absence of specimens from intermediate localities, it seems best at present to regard the Kenya Colony *Saccostomus* as a separate species (*mearnsi*) of three described races, while the form here named is so different in its coloration, that its subspecific relation to them is doubtful, and we have provisionally given it specific rank.

ACOMYS IGNITUS IGNITUS Dollman

Acomys ignitus Dollman, 1910, Ann. Mag. Nat. Hist. (8), 6, p. 229; Voi, Kenya Colony.

♂ ♂ (M. C. Z. 32107-8) Tsavo, K. C. 31. iii. & 4. iv. 34.

♂ ♀ (M. C. Z. 32106, 32110) Voi, K. C. 7. iv. 34.

♂ (M. C. Z. 32109) Kitau, Manda Id., K. C. 15. v. 34.

Coloration. The three spiny mice from Tsavo and Voi differ slightly amongst themselves, the topotype from Voi being an intense rusty on the sides while the two from Tsavo are a clear, rich ochraceous. The Manda Island animal is slightly paler with its dull dorsal area more extensive, a difference which is probably due in part to immaturity.

Measurements. ♂. (Tsavo) 120. 88. 15. 15 mm., ♀. 100. 72. 16. 16 mm.

Breeding. At Voi, on April 7, 1934, a very young male (68. 45. 11. 12 mm.) was taken.

Enemies. At Voi one was recovered from the stomach of a Lizard-Buzzard (*Kaupifalco m. monogrammicus*).

Habits. One of the Tsavo specimens was taken in a rat trap between 6 and 9 a.m., if the trapper can be believed, for he averred that he examined the trap at 6 a.m. daybreak. The abdominal fur had slipped already when found at 9 a.m., the weather was extremely hot and the trap exposed to the sun's rays.

ACOMYS WILSONI WILSONI Thomas

Acomys wilsoni Thomas, 1892, Ann. Mag. Nat. Hist. (6), 10, p. 22: Mombasa, Kenya Colony.

♂ ♀ (M. C. Z. 32111-2) Wema, Ngatana, K. C. 12 & 19. vi. 34.

Native name. *Mgonachekede* (Kipokomo).

Coloration. These two skins represent the brighter-colored coastal race of this small short-tailed spiny mouse.

Measurements. ♂. 87. 45. 12. 11 mm., ♀. 75. 50. 12. 12 mm.

DASYMYS HELUKUS HELUKUS Heller

Dasymys helukus Heller, 1910, Smithsonian Misc. Coll., 54, No. 1924, p. 2: Sirgoit, Uasin Gishu Plateau, Kenya Colony.

♀ (M. C. Z. 31357) Butandiga, U. 8. i. 34.

♂ ♀ (M. C. Z. 31354-5) Kirui, K. C. 1. ii. 34.

4 ♂ 5 ♀ (M. C. Z. 31356, 31358-65) Kaimosi, K. C. 8-22. ii. 34.

Native names. *Bunwe* (Lugishu); *inya* (Luragoli and Lutereki).

Coloration. These swamp rats form a uniformly dark, shaggy-haired series with the exception of one of the Kirui specimens which is decidedly more tawny or olive brown.

Measurements. ♂. (Kirui) 180. 142. 29. 20 mm., ♀. (Kaimosi) 165. 137. 30. 24 mm.

Parasites. Numerous fleas and mites preserved from the fur of a Kaimosi rat.

Enemies. One was recovered from the stomach of a wild cat (*Felis o. nandae*) at Kaimosi.

PELOMYS FALLAX IRIDESCENS Heller

Pelomys fallax iridescent Heller, 1912, Smithsonian Misc. Coll., 59, No. 16, p. 12: Mount Mbololo, Taita, Kenya Colony.

♀ (M. C. Z. 32123) Mt. Mbololo, K. C. 26. iv. 34.

Distribution. This is one of the mammals that Loveridge hoped to obtain in his brief visit to the type locality, but only trapped a single specimen. According to Hollister (1919, p. 125) it was abundant at the time of Heller's visit for the latter secured no less than thirty-seven.

Measurements. ♀. 130. 115. 29. ? ear. mm.

ARVICANTHIS ABYSSINICUS NUBILANS Wroughton

Arvicanthis abyssinicus nubilans 1909, Ann. Mag. Nat. Hist. (8), 4, p. 539: Kisumu, 3,600 feet, Kenya Colony.

5 ♂ 4 ♀ (M. C. Z. 31342-50) Sipi, U. 12-19. xii. 33.

6 ♂ 4 ♀ (M. C. Z. 31296-9, 31310-5) Butandiga, U. 8. i. 34.

5 ♂ 5 ♀ (M. C. Z. 31291-2, 31316-23) Kirui, K. C. 22-23. i. 34.

5 ♂ 6 ♀ (M. C. Z. 31293-5, 31324-31) Kaimosi, K. C. 10-14. ii. 34.

Native names. *Myera* (Kisabei, Lugishu and Kitosh); *manyaret* (Kimasai); *engeki* (Luragohi); *injhi* (Lutereki).

Measurements. ♂. (Kaimosi) 165. 130. 29. 18 mm., ♀. (Kirui) 161. 122. 27. 18 mm.

Enemies. Recovered from the stomachs of a Crested Eagle (*Lophætus occipitalis*), mongoose (*Herpestes i. funestus*), Hissing Sand Snake (*Psemmophis sibilans*) and Black-lipped Cobra (*Naja melanoleuca*), at Butandiga and Kaimosi.

ARVICANTHIS ABYSSINICUS VIRESCENS Heller

Arvicanthis abyssinicus virescens Heller, Smithsonian Misc. Coll., 63, No. 7, p. 11: Voi, Kenya Colony.

♂ (M. C. Z. 32207) Golbanti, K. C. 22. vi. 34.

Discussion. This specimen is referred to the coastal race which, however, is not very different from its neighbors farther inland.

Measurements. ♂. 150. 136. 30. 18 mm.

Diet. Trapped with bread as a bait.

Note. Very small ants cut the hairs from the rump of this rat as it lay dead in the trap.

LEMNISCOMYS GRISELDA MACULOSUS (Osgood)

Arvicanthis dorsalis maculosus Osgood, 1910, Publ. Field Mus. Nat. Hist., Zool. Series, 10, p. 17: Voi, Kenya Colony.

♂ (M. C. Z. 32122) Wema, Ngatana, K. C. 15. vi. 34.

Distribution. This seems to be an uncommon species on the coast of Kenya Colony though abundant enough in the Voi-Taita region.

Native name. *Kadzora* (Kipokomo).

Measurements. ♂. 130. 132. 26. 18 mm.

Breeding. Striped Grass Rats were breeding at Wema in June for about a score of nestlings, averaging 57. 32. 14. 7 mm., were brought in from the village of Wema, Tana River.

LEMNISCOMYS STRIATUS MASSAICUS (Pagenstecher)

Mus (Lemniscomys) barbarus L. var. *massaicus* Pagenstecher, 1885, Jahrb. Wiss. Anstalt, Hamburg, 2, p. 45: Lake Naivasha, Kenya Colony.

1 + 3 ♂ 2 ♀ (M. C. Z. 31687-92) Mt. Debasien, U. 21-29. xi. 33.

♂ (M. C. Z. 31664) Sabei, U. 9. xii. 33.

3 ♂ 5 ♀ (M. C. Z. 31652-9) Sipi, U. 12-20. xii. 33.

2 ♂ 2 ♀ (M. C. Z. 31660-3) Butandiga, U. 8. i. 34.

7 ♂ 4 ♀ (M. C. Z. 31676-86) Kirui, K. C. 22. i-1. ii. 34.

2 ♀ (M. C. Z. 31665-6) Elgonyi, K. C. 4. ii. 34.

4 ♂ 5 ♀ (M. C. Z. 31667-75) Kaimosi, K. C. 8-19. ii. 34.

Distribution. Another was trapped on the south bank of the Greeki River but the sun was so hot that the fur had slipped when it was brought in at 4 p.m. This species, so common in the Mount Elgon region, is an upland form apparently absent from the coast.

Native names. *Kimwarees* (Kisabei); *oluvende* (Lugishu); *aluvende* (Kitosh); *chemotet* (Kimasai); *livende* (Luragoli and Lutereki).

Measurements. ♂. (Sabei and Sipi) 136. 141. 25. 16 mm., ♀. (Sipi) 131. 133. 25. 16 mm.

Parasites. Nymphal ticks (*Ixodes* sp.) were common on these rats at Mount Debasien.

Enemies. One was recovered from the stomach of a White Nile Chanting Hawk (*Meliërax m. metabates*) on Debasien.

RHABDOMYS PUMILIO DIMINUTUS (Thomas)

Isomys pumilio diminutus Thomas, 1892, Proc. Zool. Soc. London, p. 551: Mianzini, east of Lake Naivasha, Kenya Colony.

♀ (M. C. Z. 31693) Madangi, U. 3. i. 34.

Distribution. This striped grass rat was only encountered in the alpine zone of Mount Elgon where it was common enough at 12,000 feet.

Native name. *Oluvende* (Lugishu).

Measurements. ♀. 125. 88. 21. 14 mm.

OTOMYS TROPICALIS ELGONIS Wroughton

Otomys irroratus elgonis Wroughton, 1910, Ann. Mag. Nat. Hist. (8), 5, p. 207: Elgonyi, Mount Elgon, Kenya Colony.

7 ♂ 8 ♀ (M. C. Z. 31269-72, 31377-81, 31426-31) Sipi, U. 13-16. xii. 33.

1 (M. C. Z. 31371) Kaburomi, U. 28. xii. 33.

♀ (M. C. Z. 31376) Madangi, U. 3. i. 34.

♂ (M. C. Z. 31373-4) Butandiga, U. 8. i. 34.

6 ♂ 3 ♀ (M. C. Z. 31375, 31416, 31418, 31420, 31432-4, 31436, 31439)

Kaimosi, K. C. 8-14. ii. 34.

Native names. *Urusti* (Kisabei); *mbole* (Lugishu); *ivole* (Luragoli); *livole* (Lutereki).

Measurements. ♂. (Sipi) 180. 85. 28. 23 mm., ♀. (Kaimosi) 182. 86. 26. 22 mm.

Breeding. At Sipi, on December 20, 1933, a native brought in a female suckling her two young. When I lifted her out of the gourd she made no attempt to escape and the young, though quite large, remained attached to the mother's teats as she was transferred to the ground to be photographed. Afterwards I removed the family to the 'bush' and let them go. At Butandiga, on January 8, 1934, a suckling male, measuring 83. 40. 21. 13 mm., was brought in. At Kaimosi, on February 15, 1934, a female was suckling two young.

Enemies. Elgon swamp rats were recovered from the stomachs of a variety of creatures at Kaimosi, namely a genet (*Genetta s. stuhlmanni*), tree civet (*Nandinia b. arborca*), mongooses (*Herpestes i. funestus* and *Iekneumia a. ibeana*), twice from wild cats (*Felis o. nandae*), and a mamba (*Dendraspis jamesoni*).

OTOMYS ANGONIENSIS ELASSODON Osgood

Otomys angoniensis classodon Osgood, 1910, Publ. Field Mus. Nat. Hist., Zoöl. Series, 10, p. 10: Naivasha, Kenya Colony.

5 ♂ 5 ♀ (M. C. Z. 31368-70, 31372, 31421-5, 31438) Kaburomi, U. 28. xii. 33.

2 ♀ (M. C. Z. 31366-7) Goletatomi, K. C. 31. i. 34.

3 ♂ 2 ♀ (M. C. Z. 31417, 31419, 31435, 31437, 31440) Kaimosi, K. C. 8-14. ii. 34.

Native names. *Murusi* (Kisabei, perhaps not different from that recorded above for *O. t. elgonis*); *mburustit* (Kimasai).

Coloration. This is a somewhat grayer looking animal than *O. t. elgonis* and possessing a pale grayish throat and chest. It seems to largely replace *elgonis* in the alpine zone of Mount Elgon but both occur together at Kaimosi where they are perhaps equally common though, strangely enough, Heller obtained seventeen *elgonis* but no *classodon* in this locality.

Measurements. ♂. (Kaimosi) 167. 182. 26. 22 mm., ♀. (Kaimosi) 170. 80. 23. 21 mm.

Enemies. This swamp rat is eaten by the Wanderobo at Kaburomi. Its fur figured largely in the droppings of servals (*Felis c. hindei*) which were very abundant in the alpine-meadow zone of Mount Elgon. One was recovered from the stomach of a buzzard (*Buteo r. augur*) at Kaburomi, another from that of a harrier (*Circus macrourus*) at Kaimosi.

HYSTRICIDAE

HYSTRIX GALEATA Thomas

Hystrix galeata Thomas, 1893, Ann. Mag. Nat. Hist. (6), 11, p. 220: Lamu, Kenya Colony.

♂ (M. C. Z. 32284) Sipi, U. 22. xii. 33.

Native names. *Sabidet* (Kimasai); *esegesi* (Kitosh); *isegesi* (Lugishu and Lutereki); *rungu* (Luragoli); *sasa* (Kitaita).

Discussion. This specimen is immature with only two cheek teeth erupted on each side. It can only tentatively be identified with typical *galeata* rather than with one of the more or less nominal races that have been described from Kenya Colony and Tanganyika Territory in recent years.

Measurements. ♂. 570. 80. 85. 36 mm.

Diet. Its stomach was distended with maize, so finely masticated that I had to rely for its identification on the Bagishu who speared this porcupine.

Enemies. Eaten by the Bagishu and Wasabei.

ATHERURUS TURNERI St. Leger

Atherura turneri St. Leger, 1932, Ann. Mag. Nat. Hist. (10), 10, p. 231: Kaimosi, Kakamega, Kenya Colony.

1 + 5 ♂ 4 ♀ (M. C. Z. 32274-83) Kaimosi, K. C. 8-11. ii. 34.

Native names. *Kahegenya* (Luragoli); *shihekenye* (Lutereki).

Discussion. This fine series of topotypes presents a fairly uniform appearance, with dark blackish-brown spines, pale whitish at the base, and with the tassel of the tail white. Externally they are similar to *A. africana* of western Africa, but the skulls differ conspicuously in almost lacking any sign of inflation of the premaxillary and anterior frontal region. Instead, the rostrum is narrow with a narrow and inconspicuous ascending arm of the premaxillary which hardly appears in dorsal view, whereas in the other species this part of the base of the rostrum is broad with a wide arm of the premaxillary broadly visible in the dorsal aspect of the skull. In addition the frontal region of the Kaimosi animal is much flattened, but swollen and inflated in *africana*.

Evidently *turneri* represents a much more primitive state, and instead of being a race of *africana*, as might have been supposed, may be retained as a distinct species until intermediate forms are found.

Measurements. ♂. 470. 200. 72. 39 mm., ♀. 460. 205. 62. 31 mm.

Diet. The stomachs contained finely gnawed vegetable matter.

Habitat. I often came across holes in the forest near the river. The natives said that these were made by aquatic porcupines, that they lived in them and that they did not climb trees, the latter might be inferred from their build and feet which appear unsuitable for climbing. The Watereki hunt them with dogs and spears.

THRYONOMYIDAE

CHOEROMYS GREGORIANUS (Thomas)

Aulacodus gregorianus Thomas, 1894, Ann. Mag. Nat. Hist. (6), **13**, p. 202:
Luiji Reru River, Konu, Kikuyu, Kenya Colony.

♂ juv. (M. C. Z. 31276) Kirui, K. C. 25. i. 34.

2 ♂ ♀ juv. (M. C. Z. 31273-5) Kaimosi, K. C. 9 & 20. ii. 34.

Native names. *Megore* (Kimasai); *esabolet* (Kitosh); *isiavale* (Luragoli and Lutereki).

Discussion. These specimens are very uniform in coloring, but not fully adult, as is shown by the fact that the last molars have not erupted.

Measurements. ♂. 340. 73. 62. 29 mm., ♀. 290. 85. 59. 27 mm.

Remarks. The large cane rat (*T. swinderianus*) also occurs at Kaimosi, several huge ones were offered for sale but were so highly esteemed as food that the hunters would not sell them under five

shillings (\$1.25) each. Nor would they consent to have the skin and skull removed for a shilling and the meat returned to them.

LEPORIDAE

LEPUS VICTORIAE KAKUMEGAE Heller

Lepus kakumegae Heller, 1912, Smithsonian Misc. Coll., **59**, No. 16, p. 19:
Lukosa River, Kakamega Forest, Kenya Colony.

♂ (M. C. Z. 32273) Kirui, K. C. 28. i. 34.

♂ (M. C. Z. 32272) Elgonyi, K. C. 5. ii. 34.

Native names. *Nduyu* (Kitosh); *irangut* (Kimasai); *kifoyo* (Luragoli); *shikalla* (Lutereki).

Coloration. This is a richly colored hare, the extensively black upper side of whose tail was pointed out by Heller as being one of the characters which distinguish it from typical *victoriae*.

Measurements. ♂. (Elgonyi) 480. 75. 110. 90 mm.

Parasites. Fleas and ticks were swarming on the Elgonyi animal.

Habitat. These hares were common enough on the grass-grown hill-sides of southern Elgon as well as in the alpine zone, but so active that I never got a shot at one. Both the animals listed above were snared by natives, and brought in alive, then chloroformed.

SUIDAE

HYLOCHOERUS MEINERTZHAGENI MEINERTZHAGENI Thomas

Hylochoerus meinertzhageni Thomas, 1904, Nature, **70**, p. 577: Nandi Forest, Kenya Colony at 7,000 feet.

Type locality. Mr. F. N. Hoyt of the Friends' Africa Mission at Kaimosi, informs me that the type specimen of this giant forest hog was killed by natives on the mission property just below my camp site, i.e. at Kaimosi. It was given, or sold, by the natives to Mr. A. B. Chilsom, Mr. Hoyt's predecessor, who in turn parted with it to Major Meinertzhagen when the latter was passing through Kaimosi.

The type locality is, therefore, in one sense erroneous. On the other hand the hog undoubtedly came from either the Kakamega or Nandi Forests in the vicinity of Kaimosi.

During my stay at Kaimosi a native offered me a skin for sale. He stated that it had been killed in the Nandi Forest but as it lacked head, feet and skull I did not accept it. I saw several Tereki war shields which appeared to be made from the tough hides of these giant forest hogs.

BOVIDAE

DAMALISCUS KORRIGUM TOPI Blaine

Damaliscus korrigum topi Blaine, 1914, Ann. Mag. Nat. Hist. (8), **13**, p. 333:
Near Malindi, Kenya Colony.

♂ skull (M. C. Z. 32068) Between Malindi & Golbanti, K. C. 2.v.34.

Distribution. This topotype was shot on the way to Lamu Island south of the Tana. Unfortunately the necessities of three days' incessant travelling through torrential downpours caused the hair to slip despite all precautions. I was particularly sorry to lose it as it was the first skin of any game animal that I have ever shot which I failed to preserve.

Measurements. ♂. 2,000. 430. 510. 195 mm.

Parasites. Ticks.

CEPHALOPHUS MONTICOLA MUSCULOIDES Heller

Cephalophus monticola musculoides Heller, 1913, Smithsonian Misc. Coll., **61**,
No. 7, p. 9: Kakamega Forest, Kenya Colony.

skull & 5 ♂ 1 ♀ (M. C. Z. 31102-3, 31609-10, 31967, 32196, 32286)
Elgoni, K. C. 31. i-6. ii. 34.

♂ juv. (M. C. Z. 32285) Kaimosi, Kakamega, K. C. 23. ii. 34.

Native names. *Ikirungu* (Lugishu); *kabenyet* (Kimasai); *kasendi* (Luragoli); *shiseri* (Lutereki).

Discussion. Lydekker and Blaine (1914, p. 96) regard *musculoides* and other East African forms as races of *melanorheus* (1846) from Fernando Po, treating *monticola* (1789) of Cape Colony as a distinct full species. Hollister (1924, p. 80) follows Heller in regarding all as races of the older *monticola*.

Granvik (1924, p. 31) records a male from Mount Elgon under the name of *aequatorialis* Matschie, described from Chagwe, Uganda. There is no difference to be discerned between our Elgon series and the topotype of Heller's *musculoides*, distinguished by larger size and lighter underparts which contrast with the flanks. It would appear that Granvik's identification was incorrect or, alternatively, that *musculoides* is a synonym of *aequatorialis*.

The horns of one adult male from Elgoni are peculiar in that they have not developed sufficiently to be visible externally. Their bony cores are low knobs with flattened tops which fit into small pockets in the skin instead of penetrating it.

Measurements. Heller's measurements were 525. 85. 170. 55 mm., so that our Elgonyi animals are all larger still, viz. ♂. 643. 104. 165. 54 mm., ♀. 550. 90. 165. 56 mm.

Breeding. At Elgonyi, on February 1, 1934, a native brought in a new-born duiker (♂. 310. 55. 125. 43 mm.), and at Kaimosi, February 23, 1934, another slightly older (♂. 385. 70. 130. 47. mm.). Both said that their dogs had brought them the little creatures.

Parasites. Ticks (*Amblyomma variegata* and nymphal *Rhipicephalus* sp.) were recovered from several duikers of the Elgonyi series, while *Haemaphysalis parvata* were present on the Kaimosi buck.

Enemies. At Madangi, 11,500 feet, the skull was removed from the dried body of a pygmy duiker found at the very edge of a cliff. (Unfortunately it was left behind by the skinner, so lost). The tiny antelope had evidently been cornered by a dog and disembowelled. Though these animals were very common in the alpine meadows they were so wild that it was difficult to get a shot at one. The reason for their wariness was obvious for all day long and almost every day, bands of natives accompanied by large dogs, some of which were belled, made the hills and valleys ring with their shouts and cries as they harried the game. At Kaimosi these duiker have apparently become exceedingly rare. At Elgonyi the skull cap of a duiker which had been killed by a leopard, was collected.

SYLVICAPRA GRIMMIA DESERTI Heller

Sylvicapra grimmia deserti Heller, 1913, Smithsonian Misc. Coll., 61, No. 17, p. 4: Voi, Kenya Colony.

♀ & fetus (M. C. Z. 31954, 32327) Lamu Id., K. C. 9. v. 34.

Native name. Nguruvu (Kiamu).

Discussion. These skins are referred to the coastal race though they differ little, if at all, in general coloration from inland specimens.

Measurements. ♀. 840. 110. 260. 107 mm.

Breeding. On May 9, 1934, this animal held a fetal ♀. 345. 45. 146. 57 mm. which was practically ready for birth.

Habitat. These duiker, which doubtless owe their introduction on the island to man, are said to be exceedingly common on the sand-hills east of Shella where I shot this animal as it unexpectedly dashed out of a bush.

SYLVICAPRA GRIMMIA LOBELIARUM Lönnberg

Sylvicapra grimmia lobeliarum Lönnberg, 1919, Rev. Zoöl. Africaine, 7, p. 181:
Mount Elgon (at high altitude among lobelias), Kenya Colony.

♂ (M. C. Z. 31608) Kaburomi, K. C. 30. xii. 33.

Distribution. Our specimen is topotypic having been shot above the Kaburomi camp in the alpine zone of Elgon at 11,000 feet.

Native name. *Ekisi* (Lugishu).

Discussion. This adult male has the dark forehead which is mentioned by Lönnberg as a principal character of this montane race.

Measurements. ♂. 870. 100. 272. 107 mm.

Diet. Shot while grazing at 8 a.m. Its stomach was full of grass; no internal nor external parasites observed.

SYLVICAPRA GRIMMIA NYANZAE Neumann

Sylvicapra abyssinica nyanzae Neumann, 1905, Sitz. Ges. naturf. Freunde Berlin, p. 89: Kwa Kitoto, Kavirondo, Kenya Colony.

♀ juv. (M. C. Z. 31618) Kirui, K. C. 28. i. 34.

Native name. *Ekisi* (Kitosh).

Discussion. This young animal, coming from below 7,000 feet on the southern face of Mount Elgon, is referred to *nyanzae* tentatively on geographic grounds.

Measurements. ♀. juv. 500. 50. 186. 70 mm.

Parasites. Ticks were preserved from its fur.

Habits. Many years ago, the late Dr. S. L. Hinde drew attention to the custom of captive duikers killing fowls in the same enclosure. They pulled off the heads and lapped the blood. In 1914, Mr. L. S. B. Leakey told me of his captive duiker doing the same thing. The introduction of a salt lick into the enclosure put an end to the killing of the fowls. This result seemed to show that a desire for salt on the part of the antelope led to what was supposed to be a perversion of character due to captivity.

While I was walking along the western foot of Mount Debasien, I paused on the main trail to shoot a bird in a nearby tree. An exclamation from my gunbearer, however, caused me to turn in time to see a female duiker land with a bound in the road almost on top of a dove, which I had previously observed to be feeding there. They disappeared together, the dove over, the duiker into, the rank grass which flanked the track. The boys averred that the antelope had pounced upon the bird in an effort to seize it. (November 27, 1933).

On the north bank of the Greeki River, therefore also in Karamojo, I had just shot and bagged a guineafowl when, with loud cries, a dozen of the birds rose from long grass a hundred yards away and settled in some small thorn trees. My gunbearer said that he had seen a duiker bound through the grass into the middle of the covey. Certainly the birds were so agitated by what had disturbed them that I was able to approach within range and shoot one of their number. (December 5, 1933).

OUREBIA MONTANA COTTONI Thomas & Wroughton

Ourebia cottoni Thomas & Wroughton, 1908, Ann. Mag. Nat. Hist. (8), 1, p. 178: Sirgoit Rock, Uasin Gishu Plateau, Kenya Colony.

Ourebia microdon Hollister, 1910, Smithsonian Misc. Coll., 56, No. 2, p. 4: South of Nzoia River, Uasin Gishu Plateau, Kenya Colony.

♂ juv. ♂ ♀ (M. C. Z. 31100, 31607, 31971) w. foot Mt. Debasien, U. 29. xi. 33.

Measurements. ♂. 1,000. 80. 270 (with hoof 315). 112 mm., ♀. 1,400. 100. 280 (with hoof 325). 100 mm.

Breeding. The juvenile (780. 70. 225 (with hoof 260) 90 mm.) was being weaned. It sprang up from its lair in long grass and was shot with No. 8 from a twelve bore at a distance of thirty feet.

Parasites. Nymphal ticks *Amblyomma* sp. were numerous about the genitalia.

RAPHICEROS CAMPESTRIS NEUMANNI (Matschie)

Pediotragus neumanni Matschie, 1894, Sitz. Ges. naturf. Freunde Berlin, p. 122: Northern Ugogo, Tanganyika Territory.

♀ juv. (M. C. Z. 32329) Peccatoni, K. C. 25. v. 34.

Distribution. This record must be near the northern bounds of the species on the coast. Most of the thirty examples listed by Hollister (1924, p. 94) are from inland localities on the Kenya Plateau.

Measurements. Very young ♀. 315. 65. 125. 52 mm.

RHYNCHOTRAGUS KIRKII KIRKII (Günther)

Neotragus kirkii Günther, 1880, Proc. Zoöl. Soc. London, p. 222: Brava, Italian Somaliland.

5 ♂ 3 ♀ & foetus (M. C. Z. 31946, 31968-70, 32195, 32259-60, 32328) Kitau, Manda Id., K. C. 16-19. v. 34.

Distribution. According to Heller (1913, Smithsonian Misc. Coll., 61, No. 7, p. 4) typical *kirkii* is found along the coast south to the

Tana River; the series shot by Loveridge on Manda near Lamu Island are thus approaching the southern limits of the range of the typical form.

Native name. *Tibi* (Kipokomo).

Discussion. Their cranial dimensions average noticeably smaller than those of the race *nyikae* as described by Heller. The adult males of the former have an upper tooth row of about 32–32.5 mm. as against 37.5–39 mm. in *nyikae*.

Measurements. ♂. 620. 45. 188. 68 mm., ♀. 600. 40. 191. 63 mm.

Breeding. On May 17, 1934, a fetal ♀. 264. 20. 110. 45 mm. was removed. The same day two extremely young dikdik were seen but they were both able to run well.

Enemies. According to the natives, Hunting Dogs from the adjacent mainland invade the island from time to time and harass the dikdik for days before taking their departure.

Habitat. Dikdik are said not to occur on Lamu Island but on Manda they are the dominant mammal. One would encounter at least a dozen in the course of an hour's walk. At one spot nearly three miles north of Kitau they might truly be said to be as common as rabbits in an English pasture; instead of being in pairs, small parties of them would start up on every side and go bounding away.

At eventide it was a pleasant sight to see these diminutive antelopes grazing. As the time of my visit coincided with the breaking of the rains, the acacia were in fresh verdure and presented many miniature park-like spots where the ground was clothed with blades of fresh green grass less than six inches high. At the Kitau end of the island a pair of dikdik would be found feeding in each glade at sunset. At night, as I slept across the entrance of the tent, I was awakened several times by the explosive snort of one of these animals which had wandered to within thirty feet of my bed.

RHYNCHOTRAGUS KIRKII NYIKAE Heller

Rhynchotragus kirki nyikae Heller, 1913, Smithsonian Misc. Coll., **61**, No. 7, p. 3: Ndi, Taita, Kenya Colony.

♂ ♀ (M. C. Z. 31945, 31956) Tsavo, K. C. 4. iv. 34.

♂ (M. C. Z. 31953) Karawa, near Malindi, K. C. 26. vi. 34.

Distribution. The Tsavo specimens are almost topotypic for Tsavo is only nineteen miles west of Ndi, the latter being thirteen miles west of Voi.

Discussion. These three dikdik agree in having cranial dimensions slightly larger than those of typical *kirkii*, the tooth rows also being larger as mentioned above.

Measurements. ♂. (Karawa) 630. 40. 190. 64 mm., ♀. (Tsavo) 640. 66. 192. 72 mm.

Breeding. At Tsavo, on April 4, 1934, the female carried a fetal ♂. 200. 13. 76. 29 mm., which was preserved in alcohol.

Habitat. The Tsavo pair were shot in the dry scrub within a hundred yards of Tsavo station, with a right and left of No. 3 shot from the twelve bore.

KOBUS ELLIPSIPRYMNUS KURU Heller

Kobus ellipsiprymnus kuru Heller, 1913, Smithsonian Misc. Coll., 61, No. 13, p. 6: Taveta, Kenya Colony.

♂ (M. C. Z. 31974) Wema, Ngatana, K. C. 11. vi. 34.

Native name. *Kuyo* (Kipokomo).

Discussion. Neither Lydekker and Blaine (1914, p. 230) nor Hollister (1924, p. 104) venture an opinion as to the validity of this supposed race; the latter, however, suggests that it should be compared with the race *kulu* described by Matschie (1911) from Maliwe, west of Kilwa in southern Tanganyika Territory.

Measurements. ♂. 1,500. 396. 475. 195 mm.

Breeding. This fine animal was accompanied by about twenty females but no young. They were in a marsh just a mile east of Wema, and a quarter of a mile from the north bank of the Tana River.

KOBUS DEFASSA UGANDAE Neumann

Kobus unctuosus ugandae Neumann, 1905, Sitz. Ges. naturf. Freunde Berlin, p. 92: Maianda Valley, northern Uganda.

♂ (M. C. Z. 31600) Elgoni, K. C. 28. i. 34.

Native names. *Amosemos* (Karamojong); *saramet* (Kimasai); *ekhuro* (Kitosh).

Discussion. This fine male, not wholly mature, conforms well to *ugandae* as redescribed by Lydekker. Of the various races briefly characterized by Matschie and Lönnberg, this may be closely similar to *tjäderi* Lönnberg (1907, northwestern Laikipia Plateau, west of the junction of the Guaso Nyiro and Guaso Hanek), *nzoiae* Matschie (1910, Uasin Gishu Plateau) and *fulvifrons* Matschie (1910, east of Kitosh, between the Guaso Masa and Nzoia Rivers) but until the

validity of these supposed races can be determined, Lydekker's use of *ugandae* for all the defassa waterbuck of this area seems best.

Measurements. ♂. 1,770. 325. 520. 213 mm.

Parasites. Through an oversight, the numerous cestodes which were removed from its stomach were not preserved.

Habitat. Shot at 10 A.M. while grazing alone on the mountainside at 8,000 feet, far from any water; nevertheless waterbuck tracks were common in the dense thickets close by.

TRAGELAPHUS SCRIPTUS DELAMEREI Pocock

Tragelaphus delamerei Pocock, 1900, Ann. Mag. Nat. Hist. (7), 5, p. 95: Sayer, northeastern limits of Laikipia Plateau, Kenya Colony.

♀ (M. C. Z. 31613) Elgonyi, K. C. 1. ii. 34.

Distribution. Bushbuck were frequently heard barking in the forests on the western slopes of Mount Debasien, but none was seen. They would be referable to the race *laticeps* Matschie (1912) described from the northwestern base of Debasien, should that race be recognizable. Bushbuck were often heard at Sipi and Butandiga on the western slopes of Mount Elgon, which is the type locality of *heterochrous* Cabrera (1918), but were so harried by the native hunters that none was encountered.

Native name. *Aderit* (Karamojong).

Coloration. This female from Elgonyi agrees perfectly with one from Mwanza on the south shore of Lake Victoria, in the rich rufous tone of the dorsal surfaces, narrow black spinal stripe with slight admixture of white hairs, almost complete suppression of the transverse body stripes, which, however, may be faintly traceable, three or four in number, while the lateral row of white spots is largely absent. Males are much darker, blackish brown above instead of red, with the white markings similarly suppressed or altogether absent. This more intensely colored race, therefore, inhabits the highlands of Kenya Colony from the Elgon region and northern border of Tanganyika at least to the southern end of Lake Victoria.

Measurements. ♀. 1,300. 150. 357. 142 mm.

Breeding. She was gravid with a small hairless fetal ♂. 203. 30. 59. 24 mm.

Diet. Shot while grazing at 6 P.M., the stomach held grass only, no parasites being observed.

Enemies. In certain parts of western Elgon almost every third man (Bagishu) one met was dressed in a bushbuck (*T. s. heterochrous*) skin.

TRAGELAPHUS SCRIPTUS MASSAICUS Neumann

Tragelaphus massaicus Neumann, 1902, Sitz. Ges. naturf. Freunde Berlin, p. 96: Upper Bubu River, northwestern Irangi, Tanganyika Territory.

♂ (M. C. Z. 31955) Kibwezi, K. C. 28. iii. 34.

♂ skull (M. C. Z. 31976) Voi, K. C. 10. iv. 34.

Discussion. Mr. A. B. C. Smith, long resident at Kibwezi, told Loveridge that the horns of the local bushbuck were very short, not exceeding fifteen inches in length he should think.

Measurements. ♂. 1, 290. 200. 350. 413 mm.

Habitat. One of a pair that were lying up in long grass within a couple of hundred yards of the station.

Parasites. Ticks (*Rhipicephalus maculatus*) were found in the fur.

TRAGELAPHUS SCRIPTUS OLIVACEUS Heller

Tragelaphus scriptus olivaceus Heller, 1913, Smithsonian Misc. Coll., 61, No. 13, p. 1: Maji ya chumvi, Kenya Colony.

♀ (M. C. Z. 31972) Lamu Island, K. C. 9. v. 34.

Distribution. A female was also seen on Manda Island. Hollister (1924, p. 128) appears to regard this as a valid form, representing a pale coastal race. Whether or not it is really separable from some of the pale races described from Somaliland and Ethiopia remains to be seen, but it may stand for the present.

Native name. *Kungu* (Kiamu).

Coloration. The female from Lamu is obviously paler than specimens of *massaicus* from Tanganyika Territory. It is more ochraceous buff on the sides, the central dorsal area less contrastingly brown; about four pairs of transverse body stripes are more clearly, though not sharply, marked; a lateral row of white spots becomes more numerous on the haunches; there is an elongate white mark in advance of the root of the tail on each side.

Measurements. ♀. 1, 123. 80. 335. 130 mm.

Breeding. I regretted to find that this animal was in milk.

Habitat. On several occasions, we came upon the tracks of bushbuck in the sandhills east of Shella. I had followed up one of these for a mile when a doe sprang out on the further side of a bush which I was passing, I shot it, though not fatally, and had to follow it for a mile before getting it with the second shot. These animals have so far adapted themselves to local conditions that they pause and look back when topping each high dune. It is supposed that captive specimens escaped, or that the species was deliberately introduced on to the island in bygone days.

ELEPHANTIDAE

LOXODONTA AFRICANA PEELI (Lydekker)

Elephas africanus peeli Lydekker, 1907, Proc. Zool. Soc. London, p. 393:
Aberdare Mountains, Kenya Colony.

Field Notes. Signs of elephant were numerous on Mount Debasien, a small skull was found in a ravine at about 7,000 feet and another in the patch of forest at the western foot of the mountain. At the time of my visit, however, (November, 1933) they had departed for the swamps in the vicinity of Lake Gedge, Karamoja.

When the country flanking the Greeki River, due north of Mount Elgon, is flooded, elephant must be very plentiful if one may judge by the abundance of spoor. One of my skimmers found a pair of tusks, which had been exposed by the recent burning of the grass in which they had been hidden. In accordance with regulations these were turned over to the District Officer and the reward for 'found ivory' paid to the discoverer.

During our safari through the semiflooded coastal plain between the Tana River and Malindi, evidence of the presence of elephants was of hourly occurrence. Nevertheless only one was seen, and that by the porters whom I had preceded by an hour. They halted and so did the elephant which, after looking at them, made off.

Folklore. I am indebted to Miss Parker of the mission at Kaimosi for the substance both of the following story and the Maragoli tales about baboons already recorded.

Once upon a time a man set out to dig a pit in which to trap an elephant. As he was engaged in digging, two elephants accompanied by their young came along the path and hailed the man, whose name was Shikhuyakluya. "What are you digging?" they asked. "I am digging for rats," was the reply. The elephants knew better, however, and challenged him with the remark: "It would be as well for you to brush us." (This being in reference to a sacrificial ceremony).

The man picked up a nearby reed as he enquired of an elephant: "Shall I brush you with this?" and received a reply in the affirmative. As he began to brush them with the reed, he chanted these words: "Be well, keep your eyes open and see that you do not fall into this hole." After brushing the parents, he turned to the children, but to them he muttered in a low voice so that their parents would not hear "May your eyes be closed so that you cannot see clearly. Fall into this pit." When the little elephants heard this they said to their father and mother: "Shikhuyakluya said for us to fall into the pit."

Shikhuyakluya denied the accusation, saying: "Perhaps the children did not hear correctly." Then the old elephants agreed, saying: "Our children are very young and probably did not understand." The ceremony being finished the elephants departed on their way.

The man recommenced work on the pit; on finishing it, he covered the hole with branches and leaves before taking his departure. Long afterwards, the elephants returned that way having forgotten all about the pit during the intervening time. They followed their usual path until one of the young animals fell into the hole. Only then did the old ones remember, and because they did not want Shikhuyakluya to get their little one they covered him up with earth from the heap still lying beside the path. Thus did they bury the little elephant alive and then continued on their way with their one remaining child.

PROCAVIIDAE

PROCAVIA HABESSINICA DAEMON Thomas

Procapia daemon Thomas, 1910, Ann. Mag. Nat. Hist. (8), **5**, p. 199: Elgonyi, southern slopes of Mount Elgon at 7,000 feet, Kenya Colony.

Procapia daemon varians Granvik, 1924, Lunds Univers. Arsskr., N. F., **21**, No. 3, p. 26: Eastern slopes of Mount Elgon at 7,000 feet, Kenya Colony.

2 ♂ (M. C. Z. 31097, 32477) Kirui, Mt. Elgon, K. C. 20 & 23.
i. 34.

1 + 5 ♂ 7 ♀ (M. C. Z. 31096, 31098, 31603-5, 32197-202, 32461-2) Elgonyi, K. C. 24-31. i. 34.

Native names. So far as could be ascertained, the Masai at Elgonyi did not differentiate between this and the following species which they called *mutunyet*.

Coloration. This fine series of topotypes is fairly uniform, although the extremes of variation differ obviously; on the one hand the darkest individuals with the crown dark blackish brown, minutely peppered with grayish, and the dorsal surfaces much mixed with longer black hairs; on the other, the palest skins with the pale rings on the hairs of the forehead nearly twice as broad, the black hairs on the dorsum much fewer, giving the back a much more buffy tone. The lower side is bright ochraceous buffy in all as is also the dorsal spot.

Measurements. ♂. 540. 0. 70. 35 mm., ♀. 580. 0. 72. 39 mm.

Breeding. At Elgonyi, on January 23, 1934, two of the largest of the series each held three fetuses, a third only two of an average size of 165. 0. 31. 17 mm.

Parasites. Fleas swarmed on some individuals while many others were infested with nematodes (*Crossophorus collaris* and *Trichuris* sp.)

Habitat. Plentiful on the rock-strewn slopes of the escarpment; many were seen in the vicinity of Kemp's Cave both on the cliff face and in trees growing from it.

HETEROHYRAX SYRIACUS KEMPI (Thomas)

Procavia brucei kempi Thomas, 1910, Ann. Mag. Nat. Hist. (8), 5, p. 200: Elgonyi, Mount Elgon at 7,000 feet, Kenya Colony.

♀ (M. C. Z. 32476) Kaburomi, U. 28. xii. 33.

♀ (M. C. Z.) Butandiga, U. 9. i. 34.

♂ ♀ (M. C. Z. 32473, 32475) Kirui, K. C. 22-23. i. 34.

♂ (M. C. Z. 32474) Elgonyi, K. C. 28. i. 34.

Distribution. All these localities are on, or close to, Mount Elgon, the first above Loveridge's camp at 11,000 feet, the second and fourth at 7,000 feet, while Kirui is at the southern foot about 5,000 feet.

Native names. *Adukwa* (Karamojong); *kwenera* (Kisabei); *kigen-erwa* (Lugishu); *mutumyet* (Kimasai); *lihenele* (Luragoli); *haterera* (Lutereki).

Coloration. This montane form averages a more uniform gray beneath, the chest and underside of forelimbs in particular contrasting with those of *H. s. hindei* in which race they are usually pure white to the roots of the hair though occasional specimens display a cloudiness which would render them difficult to distinguish from *kempi*. The character of head pelage being darker than the dorsal pelage, utilized by Hahn (1934, pp. 276-277) to distinguish the two forms was flatly contradicted by our material for the four adults of *kempi* conform to Hahn's definition of *hindei* in this respect.

Measurements. ♂. (Kirui) 470. 0. 67. 31 mm., ♀. (Kirui) 325. 0. 52. 30 mm.

Parasites. The stomach of the Kaburomi specimen was full of grass but free of parasites so far as could be seen, which came as somewhat of a surprise for in Tanganyika Territory most hyraxes support a heavy infestation of nematodes and cestodes.

Enemies. At Sipi (6,500 feet) I was told that hyrax were formerly plentiful but had "been driven away by the numerous goats." I thought this answer rather imaginative till I visited their haunts above Kaburomi in the alpine zone. There I saw a herd of goats, the property of one of the cave-dwelling Wanderobo, clambering about a

cliff face which had almost certainly been the home of hyrax in former times.

It is more probable, however, that it was the constant hunting by voracious Bagishu natives that reduced their numbers at Sipi; even at the remote spot where they occurred above Kaburomi, snares and traps had been set in their runways by Wanderobo who, like the Bagishu, look upon them as a regular source of food.

Habitat. At Kaburomi they occurred in a rocky gorge which was very overgrown with creepers and relatively heavily wooded with tree heath; the ravine was about an hour's walk above my camp.

One of these hyrax was seen just below Jackson's Summit, Mount Elgon, at about 13,000 feet, at an unusually early hour. It was 6.40 a.m., just twenty minutes before the sun rose over the mountain and so cold that there was frost on all the vegetation and ice on an adjacent lake.

Droppings of hyrax were found among the rocks of the Nandi Escarpment near Kaimosi. The animal is well known to both Maragoli and Watereki, but has evidently been hunted so persistently that all my efforts to secure one during my stay there, failed.

At Kirui as well as in their type locality, Elgonyi, these animals occur on the rocks of the escarpment alongside *P. h. daemon*.

HETEROHYRAX SYRIACUS HINDEI (Wroughton)

Procavia brucei hindei Wroughton, 1910, Ann. Mag. Nat. Hist. (8), 5, p. 107: Fort Hall, Kenya Colony.

Procavia brucei maculata Osgood, 1910, Publ. Field Mus. Nat. Hist., Zool. Series, 10, p. 6: Lukenya Mountain, Ulukeny Hills, Kenya Colony.

10 ♂ 4 ♀ (M. C. Z. 31952, 31964, 32338-9, 32385-8, 32463-8) Kibwezi, K. C. 24 & 27. iii. 34.

3 ♂ 5 ♀ (M. C. Z. 31965-6, 32349-51, 32389-90, 32469) Tsavo, K. C. 31. iii. 34.

3 ♂ 8 ♀ (M. C. Z. 31942-3, 32340-8) Mt. Mbololo, K. C. 19-27. iv. 34.

Native name. *Ngivu* (Kitaita).

Discussion. Hahn (1934, p. 271) considers all the described forms of *Heterohyrax* to be races of the single species *syriacus*. We are, however, not at all convinced that the very small *pumila*, and its subspecies *rudolfi*, are not a distinct species.

Coloration. The fine series collected is fairly uniform in appearance, though the dorsal spot may vary in color from clear white with a trace of ochraceous tipping, to nearly entirely ochraceous.

Measurements. ♂. (Kibwezi) 470. 0. 69. 32 mm., ♀. (Kibwezi) 480. 0. 65. 30 mm.

Breeding. At Kibwezi neither of the two females shot on March 24, 1934, was gravid, but both shot on the 27th were; one held a large fetus measuring 145 mm. from snout to anus with a hind foot of 24 mm., the other held two fetuses of much smaller dimensions.

On Mount Mbololo, April 26, 1934, a female held a single fetus measuring 203. 0. 33. 22 mm.; on the 27th, each of two females held two fetuses ready for birth and measuring from 185. 0. 35. 21 mm., to ♀. 215. 0. 36. 22 mm.

Parasites. Both cestodes (*Anoplocephala opatula*) and nematodes (*Crossophorus collaris* and *Setaria hyracis*) were numerous in the Kibwezi series.

Habitat. At Kibwezi, a young Mkamba offered to guide me to a locality where hyrax were numerous. For a couple of miles he led me southwest of the railway line till we reached scrub forest growing on the lava which covers so much of this neighborhood. The headquarters of the animals were in volcanic craters which were below the general ground level; in these hollows were numerous masses of lava and big caverns. Besides shooting some among these rocks, others were obtained in trees as they squatted on horizontal limbs or in crotches of the main stem up to heights of thirty feet from the ground. In such situations they were only seen from 8 to 10 in the early morning; as soon as the sun became powerful (11 to 12 noon) they descended and were to be detected on gnarled branches in the bush at not more than six feet from the ground. The path that traversed this wilderness of thicket was much used by natives from 6 till 10 a.m. so that the hyrax were accustomed to the sight of human beings and appeared to study them with a mildly interested curiosity. If, however, one moved from the path, at the first footfall on the dead leaves which carpeted this dry scrub, most of these hyrax vanished. It was rarely necessary to leave the path and the first seven were secured with seven shots (No. 5 from twelve bore). Finding the males were in such a heavy preponderance (ratio of 5 to 2), I returned three days later and shot seven more but found the proportion remained the same (5 to 2). Whether this inequality of the sexes is due to the females being more wary than the males, or whether it is fortuitous, I cannot say. I judge, however, that the Wakamba do not molest the hyrax to any appreciable extent; not one of them came to camp asking for their bodies. My Bagishu skinners on the other hand made themselves ill with a surfeit of hyrax meat.

At Tsavo, hyraxes were found on rocky hills a mile and a half north of the station, the environment and temperature conditions being vastly different from those obtaining at Kibwezi.

On Mount Mbololo they occurred in a great jumble of rocks and tangled undergrowth at the foot of a precipice on the southern (?) side of the mountain at an altitude of about 3,500 feet.

DENDROHYRAX ARBOREUS STUHLMANNI (Matschie)

Procavia stuhlmanni Matschie, 1892, Sitz. Ges. naturf. Freunde Berlin, p. 111: Bukoba, Tanganyika Territory.

♂ (M. C. Z. 31602) Kirui, K. C. 23. i. 34.

♂ (M. C. Z. 31099) Elgoni, K. C. i. 34.

Coloration. These two tree hyrax from Mount Elgon are provisionally referred to this race, following Hahn's 1934 revision, although they are a trifle darker brown than a toptype from Bukoba, Tanganyika Territory. The crown of the head is contrastingly dark blackish brown, with little admixture of buffy-ringed hairs, such as prevail over the rest of the dorsum. The sides of the body are barely paler though the bases of the hairs along the sides are much less dark than in the median region. On the belly the hair is clear whitish to the bases. The cheeks are mixed pale and blackish brown, the latter prevailing, and there is a slight trace of a pale supraorbital spot.

Measurements. ♂. (Elgoni) 550. 0. 75. 36 mm.

DENDROHYRAX ARBOREUS BETTONI (Thomas & Schwann)

Procavia bettoni Thomas & Schwann, 1904, Abstr. Proc. Zool. Soc. London, No. 6, p. 23, April 26: Rogoro, Kikuyu, Kenya Colony.

Procavia (Dendrohyrax) scheffleri Brauer, 1913, Sitz. Ges. naturf. Freunde Berlin, p. 131: Teleki River, Kibwezi, Kenya Colony.

Procavia (Dendrohyrax) vilhelmi Lönnberg, 1916, Arkiv för Zoölogi, 10, No. 12, p. 26: Donyo Sabuk, Kenya Colony.

♂ (M. C. Z. 31944) Mt. Mbololo, K. C. 17. iv. 34.

Distribution. This single specimen is doubtless referable to this race although the locality, Mount Mbololo, is considerably nearer to the coast than Rogoro, whence came the type. It is, however, only about seventy-five miles southeast of Kibwezi, type locality of *scheffleri* which Hahn (1934, p. 267) refers to the synonymy.

Native name. *Mbelele* (Kitaita).

Discussion. Though in color the skin of this specimen is practically indistinguishable from those of *stuhlmanni* from Mount Elgon, the skull differs notably in the much larger incisors and longer rostrum. The greatest length of the nasals is 29 mm. against 23.5 mm. in a skull of *stuhlmanni* of comparable size and age. The median point of the frontals lies on the same transverse plane as the front of the orbit in front of the lachrymal bone, whereas in the two skulls of *stuhlmanni* from Elgon it falls in advance of the orbit and even in front of the anterior root of the zygoma.

Measurements. ♂. 500. 0. 75. 23 mm. Weight 6 pounds.

Voice. Shortly after my arrival at Kibwezi station at 2.22 a.m., when preparing to sleep on the platform, I heard the raucous cries of these hyrax in close proximity to the station; later I ascertained that they came from the big trees fringing the river. The cry is like an exaggerated and prolonged call of the Square-marked Toad (*Bufo r. regularis*) and tails off like that of the Galago (*G. senegalensis lasiotis*); in other words it begins with a sound like a watchman's rattle combined with a sawing note and ends with a 'quek-quek' crescendo. Immediately after sunrise, I set off and spent a couple of hours searching for them in the dense tangle among the big trees growing north of the line, but without sighting one.

Enemies. According to my native employees (Bagishu, Mganda and Karamojong), the flesh of this animal was "as bitter as quinine" and though they had looked forward to eating it, after a trial they rejected most of the meat.

Habitat. Very abundant in the cap of forest on the summit (4,800 ft.) of Mbololo. The trees were such a height, however, and the animals so wary that it was only after persistent hunting that I succeeded in bringing one down after firing both barrels of a twelve bore loaded with No. 3 shot. Even then, after falling from this great height, it made off through the undergrowth and might well have escaped had not my gunbearer pluckily pursued and secured it.

DELPHINIDAE

PRODELPHINUS ATTENUATUS (Gray)

Steno attenuatus Gray, 1846, in "Voyage of the Erebus and Terror," Zoöl. p. 44, pl. xxviii: Cape of Good Hope.

Cranium (M. C. Z. 31734) Malindi, K. C. 30 vi. 34.

Discussion. This well-preserved cranium, picked up on the sea-

shore, agrees essentially with True's description of this species. Although the tips of the premaxillaries are slightly beachworn, the maxillary bones show forty-nine tooth sockets on each side.

DUGONGIDAE

DUGONG DUGON (Müller)

Trichechus dugon P. S. L. Müller, 1776, in Linné, Vollständiger Natursystems, Suppl., p. 21: "Vorgeburge der Guten Hofnung an, bis an die philippinischen Inseln."

Halicore dugung Erxleben, 1777, Syst. regn. animal., Classis I, Mammalia, p. 599

Discussion. Müller's name *dugon* clearly antedates Erxleben's *dugung* for the same animal.

Field Note. Dugong are said by the natives to be fairly common along the Lamu coast. While I was staying at Lamu, some fishermen took one of these animals in their nets and brought it in their boat for my inspection. The meat has a high commercial value, nevertheless, I was surprised that they refused my offer of ten shillings (\$2.50) to be allowed to skin the animal, retaining skin and skull only. Possibly Moslem laws influenced their decision.

BIBLIOGRAPHY

ALLEN, GLOVER M. and LOVERIDGE, A.

1927. "Mammals from the Uluguru and Usambara Mountains, Tanganyika Territory." *Proc. Boston Soc. Nat. Hist.*, **38**, pp. 413-441.
 1933. "Reports on the Scientific Results of an Expedition to the South-western Highlands of Tanganyika Territory. II. Mammals." *Bull. Mus. Comp. Zool.*, **75**, pp. 45-140, pl. i.

GRANVIK, HUGO

1924. "Mammals from the Eastern Slopes of Mount Elgon, Kenya Colony." *Lunds Univers. Arsskrift* (2), **21**, No. 3, pp. 1-32, pl. i-ii and text figs.

HAHN, HERBERT

1934. "Die Familie der Procaviidae." *Zeitschr. f. Säugetierkunde*, **9**, pp. 207-358, figs. 1-69, pls. xiii-xvi.

HOLLISTER, NED

1918. "East African Mammals in the United States National Museum. I. Insectivora, Chiroptera, and Carnivora." *U. S. Nat. Mus. Bull.* 99, pp. 1-194, figs. 1-3, pls. i-iv.
 1919. "East African Mammals in the United States National Museum. II. Rodentia, Lagomorpha, and Tubulidentata." *U. S. Nat. Mus. Bull.* 99, pp. 1-184, fig. 1, pls. i-xliv.
 1924. "East African Mammals in the United States National Museum. III. Primates, Artiodactyla, Perissodactyla, Proboscidea, and Hyracoidea." *U. S. Nat. Mus. Bull.* 99, pp. 1-164, fig. 1, pls. i-vii.

LYDEKKER, RICHARD and BLAINE, G.

1914. "Catalogue of the Ungulate Mammals in the British Museum (Natural History)." *Svo*, London, **2**, pp. i-xiii and 1-295, figs. 1-33.

SCHWARZ, ERNST

- 1928a. "Notes on the Classification of the African Monkeys in the genus *Cercopithecus*, Erxleben." *Ann. Mag. Nat. Hist.* (10), **1**, pp. 649-663.
 1928b. "The Species of the genus *Cercocebus*, E. Geoffroy." *Ann. Mag. Nat. Hist.* (10), **1**, pp. 664-670.
 1928c. "Bemerkungen über die roten Stummelaffen." *Zeitschr. f. Säugetierk.*, **3**, pp. 92-97.
 1929. "On the local Races and Distribution of the Black and White *Colobus* Monkeys." *Proc. Zool. Soc. London*, pp. 585-598, map.
 1931a. "On the African Long-tailed Lemurs or Galagos." *Ann. Mag. Nat. Hist.* (10), **7**, pp. 41-66.
 1931b. "On the African Short-tailed Lemurs or Pottos." *Ann. Mag. Nat. Hist.* (10), **8**, pp. 249-256.